September 2003

Fort Leonard Wood

Missouri

Installation Action Plan

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year restoration program for an installation. The plan will define all Installation Restoration Program (IRP) requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at each IAP site at the installation and other areas of concern.

In an effort to coordinate planning information between the IRP manager, major army commands (MACOMs), installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for Fort Leonard Wood. The IAP is used to track requirements, schedules and tentative budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change during the document's annual review. Under current project funding, all remedies will be in place at Fort Leonard Wood by the end of 2009.

Contributors

The following persons contributed to the formulation and completion of this Installation Action Plan:

Tiffany S. Gates-Tull	EEI for AEC
James L. Henderson	EEI for AEC
Don Kerns	EEI for Ft Leonard Wood
Mark Lenox	Ft Leonard Wood
Mark P. Ort	MDNR
Christina Ostrander	USACE
Steve Scanlon	AEC
Bob Whelove, Jr.	AEC
Ruben Zamarripa	MDNR

Approval

Fort Leonard Wood
Installation Action Plan
FY04 as of October 2003

16OCT03

MARK H. LENOX

Remedial Project Manager

17 Oct 03

J. C. ABNEY

Colonel, MP

Garrison Commander

KENNETH E. WIGGANS

Chief, Northern Restoration Management Branch

U.S. Army Environmental Center

RANDALL J. CERAR

Chief, Restoration Management Division

U.S. Army Environmental Center

Acronyms & Abbreviations

AEC	(United States) Army Environmental Center (formally called USATHMA)
AIT	Advanced Individual Training
ANCOC	Advanced Noncommissioned Officer Course
AST	Aboveground Storage Tank
BCT	Basin Combat Training
BNCOC	Basic Noncommissioned Officer Course
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CDTF	Chemical Defense Training Facility
CENWK	Corps of Engineers, Kansas City District
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (1980)
CFC	Chloroflourocarbon
CTC	Cost to Complete
cy	cubic yards
DERP	Defense Environmental Restoration Program (now called ER,A)
DNT	Dinitrotoluene
DOL	Directorate of Logistics
DPW	Directorate of Public Works
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System
EPA	(United States) Environmental Protection Agency
ER,A	Environmental Restoration, Army (formally called DERA)
FS	Feasibility Study
FLW	Fort Leonard Wood
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
gal	gallon
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ITRO	Interservice Training Review Organization
K	$1,000
LTM	Long Term Monitoring
LTO	Long Term Operation
MANSCEN	Maneuver Support Center
MCL	Maximum Contaminant Level
MDNR	Missouri Department of Natural Resources
MOS	Military Occupational Specialty
MSL	mean sea level
MTOC	Motor Transport Operations Course
NCO	Noncommissioned Officer
NE	Not Evaluated
NFA	No Further Action
NFRAP	No Further Remedial Action Plan
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OB/OD	Open Burning / Open Detonation
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyl
PCE	type of chlorinated solvent
PCP	pentachlorophenol

Acronyms & Abbreviations

PLDC	Primary Leadership Development Course
POL	Petroleum, Oil & Lubricants
POM	Program Objective Memorandum (budget)
RA	Remedial Action
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy in Place
RRSE	Relative Risk Site Evaluation
RSC	Reserve Support Command
SI	Site Inspection
SLAAP	Saint Louis Army Ammunition Plant
SLOP	Saint Louis Ordnance Plant
STP	Sewage Treatment Plant
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TCLP	Toxic Characteristic Leaking Procedure
TNT	Tri Nitro Toluene
USACE	United States Army Corps of Engineers
USAEHA	United States Army Environmental Hygiene Agency (now called CHPPM)
USATHMA	United States Army Toxic and Hazardous Material Agency (now called AEC)
USGS	United State Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
VSI	Visual Site Inspection
WSOW	Weldon Spring Ordnance Works
yr	year

Summary

STATUS: Fort Leonard Wood is considered a Resource Conservation and Recovery Act (RCRA), Large Quantity Generator. Fort Leonard Wood is not a National Priorities List (NPL) site. However, Weldon Spring Ordnance Works (WSOW) is an NPL site. FLW is the owner of record for WSOW. The Kansas City District Corps of Engineer, under the Formerly Used Defense Sites (FUDS) Program, is managing the remediation activities at WSOW.

NUMBER OF DSERTS SITES:
68 DSERTS sites
7 Active ER,A Sites= FLW-2, 3, 6, 28, 56, 59, 60
5 Active ER,A Sites without funding= FLW-12, 13, 14, 15, 16
56 Response Complete Sites

DIFFERENT DSERTS SITE TYPES:

1 Burn Area	4 Fire/Crash Training Areas
1 Contaminated Fill	2 Surface Disposal Areas
1 Bldg Demo/ Debris Removal	3 Incinerators
22 Landfills	1 POL Line
1 Pesticide Shop	8 Storage Areas
3 Surface Impoundment Lagoons	1 Spill Site Area
1 Sewage Treatment Plant	1 Above Ground Storage Tank
15 Underground Storage Tanks	1 Waste Treatment Plants
2 Explosive Ordnance Disposal Areas	

CONTAMINANTS OF CONCERN: Solvents, Metals, Petroleum, Oil and Lubricants (POL), Pesticides, Organics, Explosives

MEDIA OF CONCERN: Surface Water, Groundwater, Soil

COMPLETED REM/IRA/RA: FLW- 02, 33A, 33K, 34, 37, 42, 44, 45,46, 48, and 58

CURRENT IRP PHASES: RI/FS at 4 sites= FLW- 02, 03, 06, 56

PROJECTED IRP PHASES:
RI/FS at 6 sites= FLW-2, 3, 28, 56, 59, 60
LTM at 4 sites= FLW- 02, 03, 56, 59

IDENTIFIED POSSIBLE REM/ IRA/RA: None

FUNDING:

Prior Year Funding	$ 5,954,320
Expected Future Funding	$ 8,426,000
Total IRP Cost	$14,380,320

DURATION:

Year of IRP Inception:	1985
Year of IRP Completion excluding LTM:	2009
Year of IRP Completion including LTM:	2017

Installation Information

SITE DESCRIPTION:

Fort Leonard Wood lies in Townships 33N to 36N and Ranges 10W to 13W. The facility occupies 61,410.15 acres and is located approximately 30 miles southwest of Rolla, Missouri. The facility lies almost entirely in Pulaski County with small portions in Laclede and Texas Counties, all in the south central part of Missouri. Fort Leonard Wood is bordered on the west by Roubidoux Creek, and on the east by the Big Piney River.
Two small towns, Waynesville and St. Roberts, are located directly north of the facility.

IRP EXECUTING AGENCIES:

- Installation is overall executing agency
- Investigative Phase: Installation/United State Geological Survey (USGS)/KCD
- Remedial Design/Action Phase: Installation/Corps of Engineers, Kansas City District (CENWK)

REGULATORY PARTICIPATION:

- State: Missouri Department of Natural Resources (MDNR), Federal Facilities Section

REGULATORY STATUS:

- Interagency Agreement with Environmental Protection Agency (EPA), and Missouri Department of Natural Resources (MDNR) for Weldon Spring NPL site.
- Nine (9) National Pollutant Discharge and Elimination System (NPDES) permits
- Missouri Solid Waste, Demolition Landfill
- Missouri Air Permits for three mobile rock crushing facilities, fog oil generation (1995), MP and Chemical School(s) field training (1999), Chemical Defense Training Facility (CDTF), emergency generators, paint booths, and several POL tanks.

MAJOR CHANGES TO IRP FROM THE PREVIOUS YEAR

- The remedial investigation phase has begun on FLW-006. Investigative work for FLW-002 has concluded, and the RI/FS will be completed when the final RI/FS report is complete.
- The Environmental Protection Agency National Enforcement Investigations Center conducted a multimedia compliance investigation on Fort Leonard Wood in September 2002. The investigation found Fort Leonard Wood in compliance with both CERCLA and RCRA § 3008(h).

FORT LEONARD WOOD

Fort Leonard Wood is located in central Missouri, about 120 miles southwest of St. Louis, Missouri, and 85 miles northeast of Springfield, Missouri along Interstate Highway 44. The installation occupies approximately 61,410 acres and is located primarily in Pulaski County, with small portions in Texas and Laclede counties.

Fort Leonard Wood was established in 1940 as a Basic Training Center. The Basic Training Center has evolved into the Maneuver Support Center (MANSCEN). MANSCEN's mission is to provide the nation with individuals strengthened by values, leaders, and teams trained in basic combat skills, as well as advanced individual skills in chemical, engineer, military police, and transportation disciplines.

Fort Leonard Wood accomplishes training through its Command Group, the United States Army Chemical, Engineer, and Military Police Schools, Training Brigades and Garrison staff. The 1st Engineer Brigade provides Advanced Individual Training (AIT) and one station unit training in a variety of military specialties. In 1995 the Brigade started training members of the Air Force, Navy and Marines in several military specialties. The different services are not in the brigade but work closely together along with the Interservice Training Review Organization (ITRO). The Brigade also is responsible for teaching the Officer's Basic and Captain's Career Officer courses, Warrant Officer courses, and the Sapper Leader course. The 1st Engineer Brigade occupies buildings primarily in the 800 area of Fort Leonard Wood.

The 3rd Training Brigade conducts Army Basic Combat Training (BCT) at Fort Leonard Wood. The 3rd Training Brigade trains over 16,000 soldiers annually in the three phases of basic combat training. The 3rd Training Brigade primarily occupies buildings in the 600 area.

The 3rd Chemical Brigade provides command, control, administration, supply, housing and training for the 82nd Chemical Battalion, the 84th Chemical Battalion, the 58th Transportation Battalion, and the International Students Company. The 3rd Chemical Brigade also implements Military Occupational Specialty (MOS), professional development, and functional course training. The Chemical Defense Training Facility Department is under the control of the 3rd Chemical Brigade. The 3rd Chemical Brigade occupies buildings in the 700 area.

Fort Leonard Wood is also the home of the U.S. Army Military Police School. The 14th Military Police Brigade provides command, control, administration, supply, housing and selected training for assigned cadre, basic trainees, professional and functional courses students and military police students. The 14th Military Police Brigade occupies buildings located in the 1000 area.

Additionally, the MANSCEN NCO Academy hosts the Primary Leadership Development Course (PLDC), Basic Noncommissioned Officer Course (BNCOC), Advanced NCO Course (ANCOC) and Drill Sergeant Schools.

Fort Leonard Wood is located in the west-central part of the Salem Plateau of the Ozark Physiographic Province. Commonly referred to as the Ozark carbonate area, the regional geomorphology comprises karsts features (soluble rock) including permeable bedrock, permeable soils, springs, caves, sinkholes, and massive rock bluffs along streams. Three Ordovician carbonate formations crop out in the area of Fort Leonard Wood: the Jefferson City Dolomite, the Roubidoux Formation, and the Gasconade Dolomite.

The Jefferson City Formation is the youngest formation remaining in the Fort Leonard Wood area and is restricted to the top of the high ridge that separates the Big Piney River and Roubidoux Creek watersheds. In general, the Jefferson City Formation occurs only where ground elevation is greater than approximately 1110 feet above mean sea level (MSL). The formation, which varies from 0 to 220 feet in thickness, is a thin-bedded finely- to medium- crystalline dolomite interbedded with numerous massive, cherty dolomite beds, and rare thin shale beds.

The Roubidoux Formation, which underlies the Jefferson City, crops out over the extent of the post and has weathered to form extensive residual soils. When unweathered, the Roubidoux Formation is composed of tan to buff-colored, finely- to medium-crystalline, thin- to thick-bedded, vuggy dolomite with abundant chert and sandstone lenses. Roubidoux thickness varies from 0 to 180 feet.

The Gasconade Formation is the oldest strata to crop out at FLW. Surface exposure of the formation is limited to deeply eroded stream valley bottoms of Roubidoux Creek and Big Piney River. The Gasconade Formation is divided into two units: 1) the Upper Gasconade which is the lowest stratigraphic unit to outcrop at FLW and is composed of finely- to coarsely-crystalline, generally chert-free, vuggy dolomite; and 2) the Lower Gasconade which is composed of finely- to medium-crystalline cherty dolomite with rare, thin beds of sandstone. Upper Gasconade thickness varies from 0 to 100 feet, and Lower Gasconade thickness ranges from 205 to 385 feet. A thin (10 to 45 feet) dolomite-cemented, medium-grained sandstone unit, called the Gunter Sandstone Member, occurs at the base of the lower Gasconade. The base of the Gunter Sandstone Member represents the contact between the Ordovician and Cambrian Systems.

Cambrian strata underlie the Gasconade Formation and are composed of the Eminence Dolomite and the underlying Potosi Dolomite. Both are medium-crystalline and massively bedded. The Potosi Dolomite contains abundant chert and quartz druse, whereas, in the Eminence Dolomite, chert occurs only in small amounts in the upper part of the formation.

Subsequent to their deposition, these sediments were deeply buried beneath younger Paleozoic and Mesozoic sediments. More recently, the rocks have been uplifted and subaerially exposed. The uplift of the area also produced numerous fractures and northwest trending faults in the region. At the surface, the rocks are exposed to fresh water which preferentially flows through these fractures and result in the dissolution of the carbonate rocks and the formation of caves and sinks. Erosion from surface water, creeks, and rivers, has dissected the relatively flat strata producing the karsts topography.

SAINT LOUIS ORDNANCE PLANT

FLW was the owner of a portion of the Saint Louis Ordnance Plant (SLOP) in it's role as the support installation for the reserve center located on this site. The SLOP was an industrial complex for the manufacture of propellants and primers. This complex, and the adjacent St. Louis Army Ammunition Plant (SLAAP), have been excessed in parcels to several owners since closure. MDNR is in the process of working with the Corps of Engineers through the FUDS program to establish ownership and remediation responsibilities. FLW owns a small portion, 23 acres, of the former 270 acre plant. In September 1996, the ownership and remediation responsibility for this site was transferred to the 89th Reserve Support Command (RSC) headquartered in Wichita, Kansas.

WELDON SPRING ORDNANCE WORKS

WSOW is a 17,000 acre former Tri Nitro Toluene (TNT) and Dinitrotoluene (DNT) manufacturing plant. After excessing most of the 17,000 acres, the Army retained the contaminated production area, which now makes up the Weldon Springs Training Area (WSTA). Most of the WSTA is off limits to training until the soil and pipeline remediation is completed. The Kansas City District Corps manages the remediation under the FUDS program. WSTA is undergoing transfer from FLW to the 89th RSC.

Contamination Assessment

MDNR does not have a state superfund program. FLW is following a Non-NPL Comprehensive Environmental Response Compensation and Liability Act (CERCLA) process at all of the sites. The Post has been the subject of studies listed as 'Previous Studies' to determine the extent and occurrence of possible contamination. These studies to date have not resulted in the issuance of Notices of Violations or Consent Orders/ Agreements. Contaminants at these sites include solvents, metals, pesticides, POL, explosives, and PCP. A spring located off post to the north has low concentrations of PCE. PCE is a contaminant of concern at sites on FLW. PCE is a solvent also used in dry cleaning operations adjacent to FLW that are in the watershed of the spring where the PCE concentrations were measured.

FLW has tasked the Corps to survey the surrounding area as to interest in public participation of a Restoration Advisory Board (RAB) in the ongoing investigations.

Fort Leonard Wood has 68 IRP sites that have been identified as having the possibility to cause contamination. Seven sites (FLW-02, 03, 06, 28, 56, 59, 60) have been identified for further investigation and/or remediation. Five sites (FLW-12, 13, 14, 15, 16) are active but are not expected to need additional funding and 56 sites (see 'No Further Action' List in the Schedule Section) have been tentatively identified for closure. The sampling and other site data will be submitted to MDNR and closure requested. The possibility exist that more information will be obtained on these sites, which may make it necessary to conduct further investigations or remedial activities.

PREVIOUS STUDIES

	Title	AUTHOR	DATE
1	Installation Assessment of the U.S. Army Training Center Report No. 322 1982 DRXTH-AS-82322	Environmental Science and Engineering	1982
2	Hazardous Waste Consultation No. 37-26-1646-88 Evaluation of Solid Waste Management Units	U.S. Army Environmental Hygiene Agency (USAEHA)	1-4 Jun-1987 and 27 Jun - Jul 1988
3	Investigation of Closed Sanitary Landfills	USAEHA	Sep-98
4	Geohydrologic Study	USAEHA	Jul-88
5	Sampling Visit	USAEHA	Jul-90
6	Ground Water Quality Consultation NO 38-26-KV44-93 RCRA Facility Assessment Sampling Visit	USAEHA	29 Mar- 2 Apr 1993
7	Final RCRA Facility Assessment Report	Prepared for EPA Region VII by PRC Environmental Management. Inc	16-Sep-92
8	Geohydrologic and Water Quality Assessment Report 96-4270	U.S. Geological Survey Water Resources Investigations	1994
9	Geohydrology and Water Quality at Shanghai Spring and Solid Waste Management Units Report 00-4178	U.S. Geological Survey Water Resources Investigations	1995-98

Fort Leonard Wood

Missouri

ER,A ELIGIBLE
ACTIVE SITES

FLW-002
LANDFILL 2 (MTOC) (PAGE 1 OF 2)

SITE DESCRIPTION

FLW-002 (Landfill No. 02) is a 34.4 acre inactive soil covered sanitary landfill that operated between 1981 and 1985. It is in the west-central portion of FLW, 2.5 miles south of Forney Army Airfield and 0.5 miles west of road FLW 1. FLW-002 was permitted by the MDNR in 1978 for disposal of wastes excluding industrial wastes (USAEHA, 1987). These wastes included sanitary wastes and sludges from the print shop and dry cleaning wastes. There has not been any exposed waste since the landfill became inactive. The primary concern at this site is potential groundwater contamination.

Prior to Aug 2000, the landfill surface was irregular, vegetated with brush and small trees, and contained a bedrock outcrop on the west central portion of the landfill. On the eastern edge of the outcrop, leachate was observed on the surface. Leachate was also observed along the northeastern face of the landfill. This leachate drained north through a culvert beneath a bordering gravel road. To repair the landfill surface in accordance with MDNR permit closure requirements (2-ft thick soil cover), woody vegetation was removed from the landfill and the existing soil cover was repaired.

The depth to groundwater at this site is ~150-220 ft in the bedrock. Water bearing zones are locally present above the water table (perched water).

The PA/SI for this site was conducted between 1987 and 1995. Five shallow wells (less than 30-ft deep) were installed in the overburden at FLW-002 during 1987 (USAEHA, 1988). Initially these wells were dry, however, 4 months later 2 wells had small amounts of water. Water from these 2 wells and 1 seep in the north central part of the site was sampled during 1988. Water samples from these wells were analyzed for inorganic constituents, volatile organics, semi volatile organics, pesticides, and PCBs. These water samples contained inorganic constituents that exceeded background concentrations.

During 1990, 3 bedrock-monitoring wells were installed at depths ranging from 83-100 feet (USAEHA 1990). Water samples from these wells were analyzed for inorganic constituents, volatile organics, semi volatile organics, pesticides, and PCBs. Water samples from these wells did not exceed background concentrations of inorganics.

The RI at this site began in 1997. During 1997, 4 monitoring wells were completed to water table and 1 monitoring well was completed in a perched water zone. There were traces of PCE and vinyl chloride below MCL in the water table wells. Sampling of the perched water indicated vinyl chloride above MCL and trace amounts of other chlorinated solvents.

Soil and sediment samples were collected from the surface of the landfill and from the dry stream beds near the landfill. No significant concentrations of inorganic constituents or organic compounds were detected. Soil gas samples from the surface of the landfill indicated the presence of PCE and other chlorinated solvents in the southeastern part of the site.

Since 1997, additional monitoring wells were installed to determine extent of contamination and groundwater flow direction at the site. The monitoring well sampling program will continue until the nature and extent of groundwater contamination is determined. As of summer 2003, no contamination has been detected in the groundwater (from 14 wells) above MCLs.

STATUS

RRSE RATING:
High

CONTAMINANTS:
Chlorinated Solvents

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RI/FS

FUTURE IRP PHASE:
RI/FS, LTM

Constrained Cost to Complete

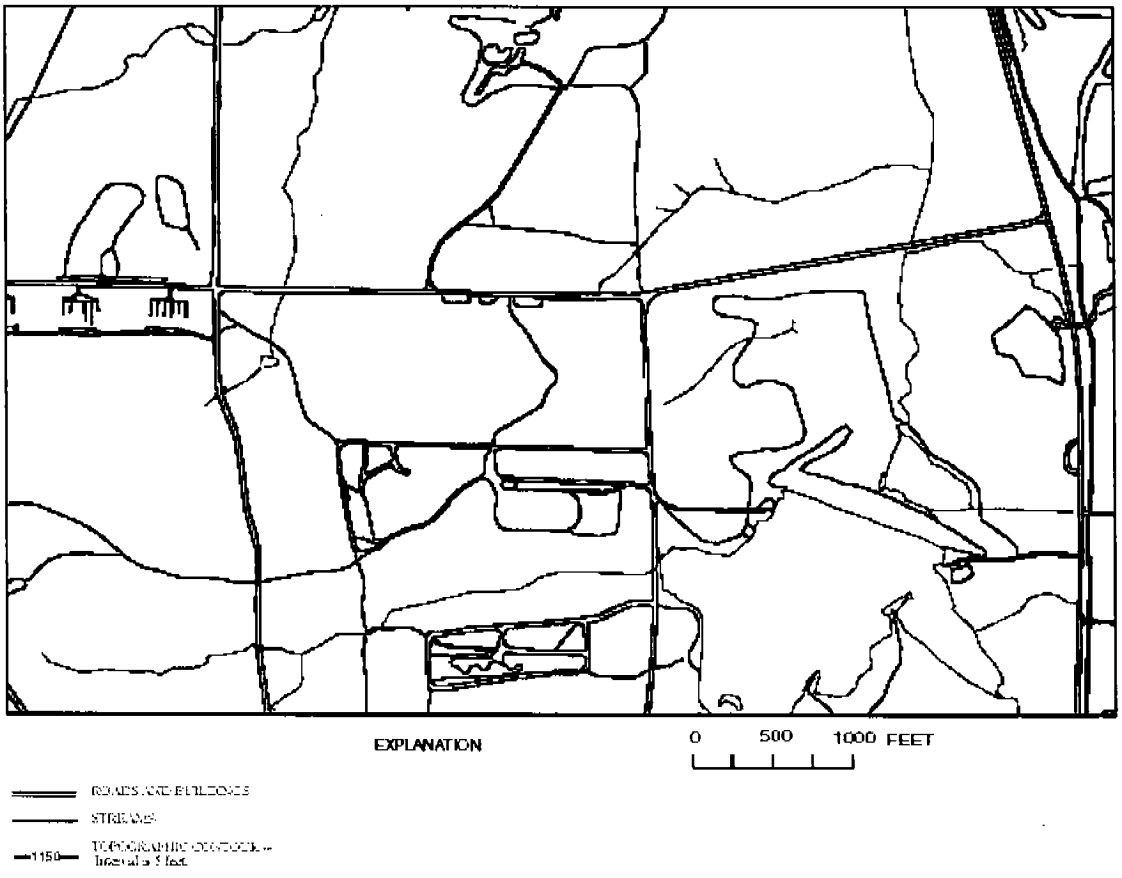
	2004	2005	2006	2007+
RI/FS	180	50		
IRA				
RD				
RA				
LTO				
LTM		100	100	988
Total	1,418,000			

FLW-002
LANDFILL 2 (MTOC) (PAGE 2 OF 2)

PROPOSED PLAN

A Draft RI/FS is expected to be submitted to the installation in Oct 2003, and submitted to MDNR in Jan 2004.

Long term monitoring (LTM) is anticipated to be the final remedy. Land use controls are coordinated with the installation master planner and established for this site.



LANDFILL 3(A) (SOUTH WATER TOWER I)

SITE DESCRIPTION

FLW-003 is an 82-acre, inactive trench and fill sanitary landfill that operated between 1965 and 1978. It is located north of road FLW 30 and east of road FLW 1 approximately 0.75 miles southeast of Forney Air Field. The landfill was divided into a northern section (approximately 52 acres) and a southern section (approximately 30 acres) separated by an intermittent stream. The landfill was used for disposal of municipal waste generated at FLW. The surface of the landfill is vegetated with grass and brush. The northern section generally slopes north to south. The southern section slopes south to north. The landfill shows some surface subsidence and surface leachate seeps. The seeps are primarily on the slopes. Refuse is exposed in some areas. Sludge from the Sewage Treatment Plant is applied to the surface to encourage vegetation. Large caverns are underneath the landfill. Leachate from the landfill has impacted the groundwater quality.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Chlorinated Solvents, Metals
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

The depth to groundwater at this site is approximately 200 to 280 feet, in the bedrock. Water bearing zones are locally present above the water table (perched water).

The PA/SI for this site was conducted between 1987 and 1995. Twelve shallow wells (less than 50-feet deep) were installed in the overburden at FLW-003 during 1987 (USAEHA, 1988). Initially all of these wells were dry, however, 4 months later one well had small amounts of water. A water sample from this well was analyzed for inorganic constituents, volatile organics, semi volatile organics, pesticides, and PCBs. Inorganic constituents did not exceed background concentrations and no organic compounds were detected.

Constrained Cost to Complete

	2004	2005	2006	2007+
RI/FS	255	647	190	
IRA				
RD				
RA				
LTO				
LTM				1994
Total	3,086,000			

During 1990, four bedrock-monitoring wells were installed at depths ranging from 58 to 102 feet (USAEHA 1990). One well contained perched water. A water sample from this well was analyzed for inorganic constituents, volatile organics, semi volatile organics, pesticides, and PCBs. This sample contained inorganic constituents (chloride and barium) that exceeded background. No organic compounds were detected.

Soil, streambed sediments, and leachate seeps were sampled in 1995. Soil and streambed sediments were analyzed for inorganic constituents, pesticides, and PCBs. No significant concentrations of inorganic constituents or organic compounds were detected. Leachate seeps and groundwater samples from two shallow wells were analyzed for inorganic constituents, Volatile Organic Compound (VOCs), Semi Volatile Organic Compound (SVOCs), and pesticides. Vinyl chloride and benzene were detected above MCL in the leachate samples. No organic compounds were detected in the groundwater samples.

The RI at this site began in 1998. During 1998 and 1999, twelve monitoring wells were completed to the water table and five monitoring wells were completed in perched water zones. At some locations, large voids, in excess of ten feet in vertical extent and undetermined horizontal extent, were encountered during drilling. Groundwater samples from these wells were analyzed for inorganic constituents, VOCs, SVOCs, and pesticides. These samples contained larger than background inorganic constituents. The sample analyses also included PCE and vinyl chloride in concentrations greater than MCL, and trace amounts of other chlorinated solvents.

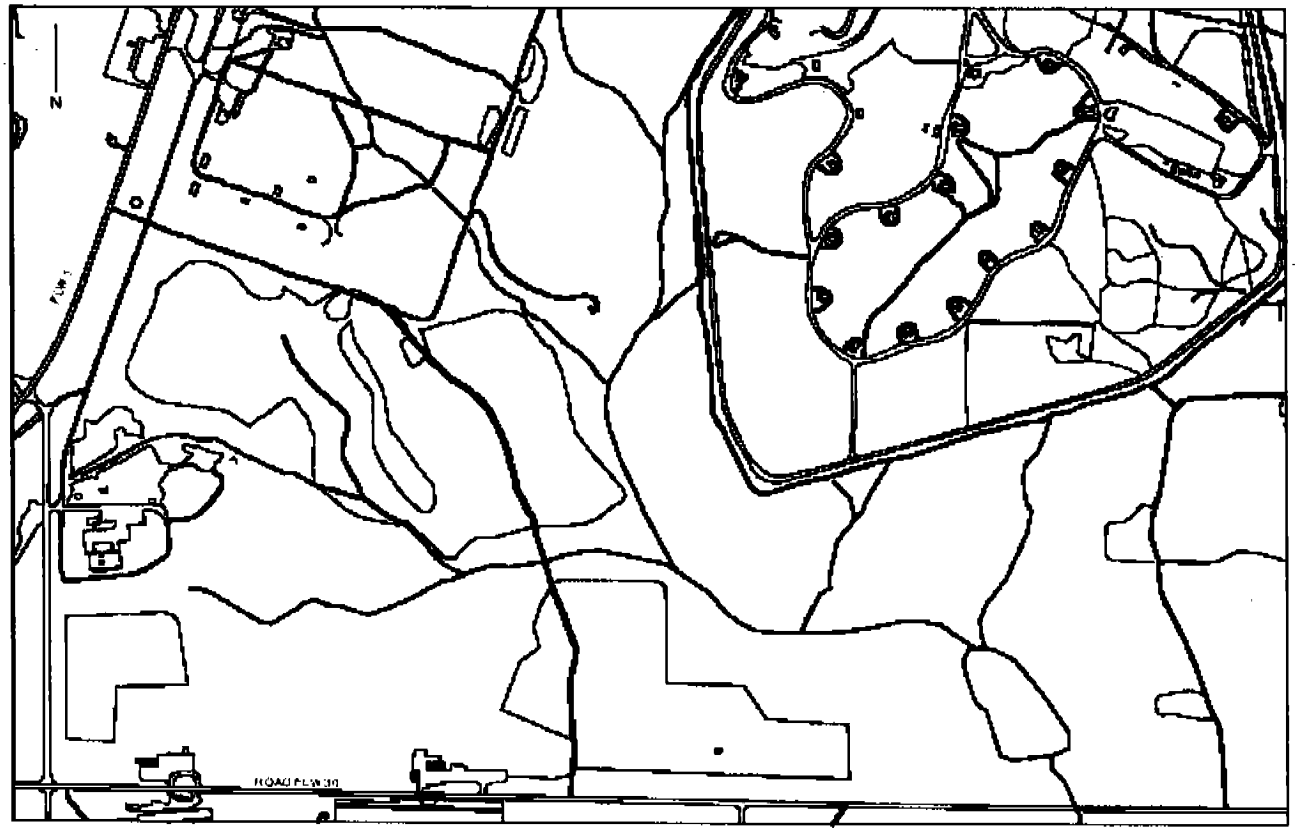
PCE was detected in Shanghai Spring located off-post that may be hydraulically connected to the landfill.

In 2001, 6 additional wells were added to the site. In 2002, a phytoremediation study was conducted on a ~5 acre area of 'volunteer trees' in the landfill area.

FLW-003 (PAGE 2 OF 2)
LANDFILL 3(A) (SOUTH WATER TOWER I)

PROPOSED PLAN

An additional 4 wells are expected to be installed. The RI is expected to be completed in FY06. Soil cover repair (for erosion control) is planned. Groundwater monitoring will continue.



0 500 1,000 FEET

ROADS

STREAMS

FLW-006
LANDFILL 4 (BALLFIELD/ RUNNING TRAIL)

SITE DESCRIPTION

A closed sanitary landfill, that operated from an unknown initial date to 1950. It is located northeast of the intersection of Constitution and Kansas roads in the Cantonment. The landfill occupied 7.3 acres. Presently, the landfill is completely covered with vegetation and no exposed trash is evident.

Leachate seeps are evident where drainage borders the landfill on the east. Soil gas and leachate samples were collected and analyzed to evaluate the potential for contaminants and their potential to migrate. No contaminants were detected. However, the landfill continues to produce leachate seeps along the stream bank.

Fort Wood will conduct sampling of the leachate seeps, stream sediments, and stream surface water up gradient and down gradient of the landfill during FY02 using non-IRP funding. Sediments samples were taken in 2002, vinyl chloride was detected in one sample. No groundwater samples have been taken.

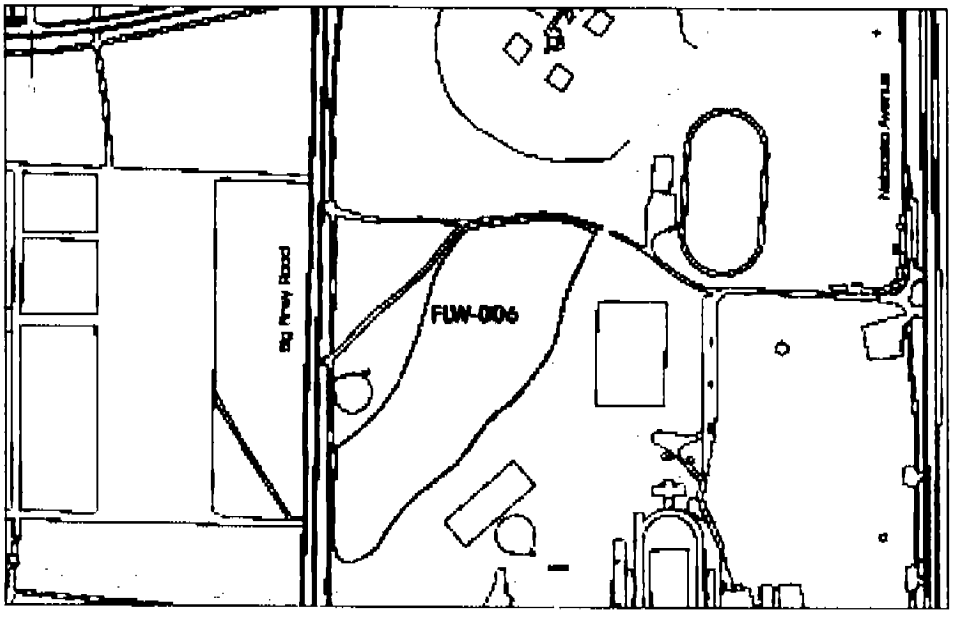
STATUS

RRSE RATING:
Low
CONTAMINANTS:
Chlorinated Solvents, Metals
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS

Constrained Cost to Complete				
	2004	2005	2006	2007+
RI/FS				465
IRA				
RD				
RA				
LTO				
LTM				
Total	465,000			

PROPOSED PLAN

A RI/FS will be conducted to determine the nature and extent of contamination. With the current, limited information, no further action is expected to be needed.



FLW-012
LANDFILL 10A (STP I)

SITE DESCRIPTION

Landfill number 10A, is a closed sanitary landfill operated between 1960 to 1969. Household waste and the residue from the open burning of household waste were buried in this landfill. It is located southeast of road FLW AB and north of Plant Road and occupies 2.8 acres. It is located on the edge of Dry Creek that feeds to Shanghai Spring. PCE has been detected in the Spring at levels below regulatory requirements. The source of the PCE has not been fully defined. During rain events, levels of PCE in Shanghai Spring increase indicating a source is close to the spring. The depth of the landfill is unknown. It is covered with vegetation (grasses and weeds), with no exposed debris. It is used for the land application of sewage treatment plant sludge.

Dye tracing, conducted in 1996 indicated that the landfill area and Shanghai Spring are hydraulically connected. The sewage treatment plant discharges downstream from the landfill area.

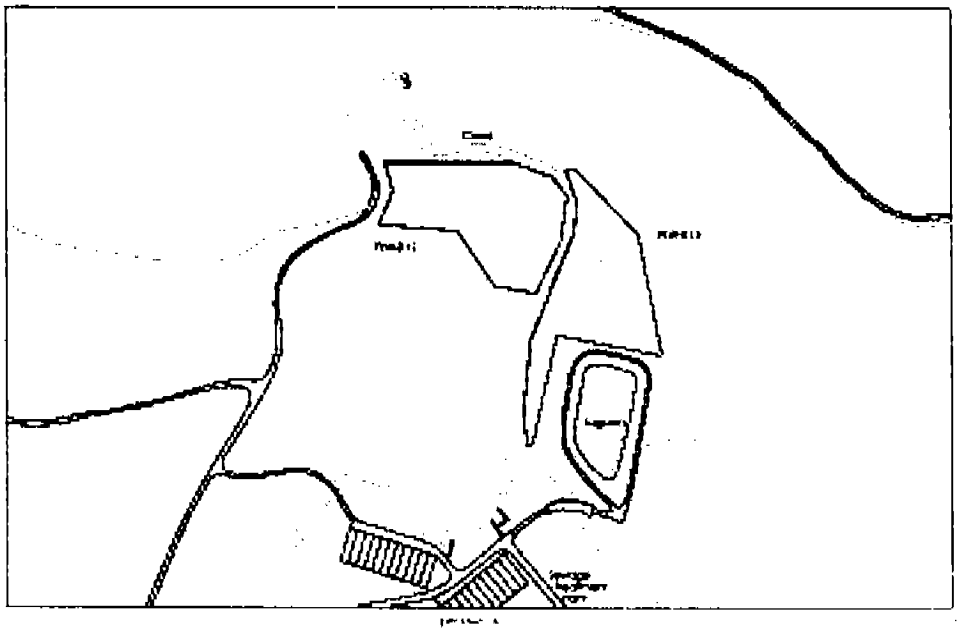
STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals, Chlorinated Solvents
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RC

PA was completed in September 1992, Final RCRA Facility Assessment Report for Fort Leonard Wood. This report was based on a visual inspection and sampling was not conducted. Based on funding limitations and RRSE, the installation did not pursue further investigation at this site. During the 2003 IAP workshop, the installation representative and the State regulator agreed that further investigation may be warranted.

PROPOSED PLAN

A record search (funded in FY03) is the last expected action at this site.



FLW-013
LANDFILL 10B

SITE DESCRIPTION

Landfill number 10B, is a closed sanitary landfill used between 1961 and 1969. It is north of the STP holding basin and southeast of Landfill Number 10A, at the end of Plant Road, and occupies 3.6 acres. It was used for the disposal of household waste, trees, and sludge from the STP. It is located on the edge of Dry Creek that feeds to Shanghai Spring. PCE has been detected in the Spring at levels below regulatory requirements. The source of the PCE has not been fully defined. During rain events, levels of PCE in Shanghai Spring increase indicating a source is close to the spring. The depth of the landfill is unknown. It is covered with vegetation (grasses and weeds), with no exposed debris. It is used for the land application of sewage treatment plant sludge.

Dye tracing, conducted in 1996 indicated that the landfill area and Shanghai Spring are hydraulically connected. The sewage treatment plant discharges downstream from the landfill area.

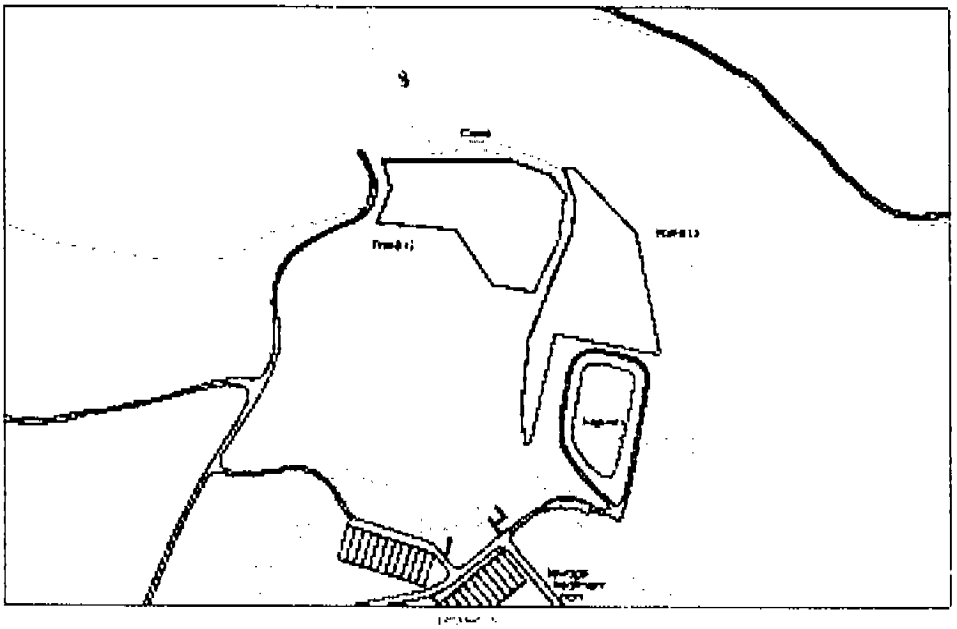
STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals, Chlorinated Solvents
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RC

PA was completed in September 1992, Final RCRA Facility Assessment Report for Fort Leonard Wood. This report was based on a visual inspection and sampling was not conducted. Based on funding limitations and RRSE, the installation did not pursue further investigation at this site. During the 2003 IAP workshop, the installation representative and the State regulator agreed that further investigation may be warranted.

PROPOSED PLAN

A record search (funded in FY03) is the last expected action at this site.



FLW-014
LANDFILL 11A (STP III)

SITE DESCRIPTION

Landfill No. 11A is a closed sanitary landfill that operated between 1947 and 1957. It is north of Plant Road, near the STP, in the extreme northeast Cantonment Area and occupies 6.1 acres. Landfill No. 11A was used to dispose of household garbage. It is located on the edge of Dry Creek that feeds to Shanghai Spring. PCE has been detected in the Spring at levels below regulatory requirements. The source of the PCE has not been fully defined. During rain events, levels of PCE in Shanghai Spring increase indicating a source is close to the spring. The depth of the landfill is unknown. It is covered with vegetation (grasses and weeds), with no exposed debris. It is used for the land application of sewage treatment plant sludge.

Dye tracing, conducted in 1996 indicated that the landfill area and Shanghai Spring are hydraulically connected. The sewage treatment plant discharges downstream from the landfill area.

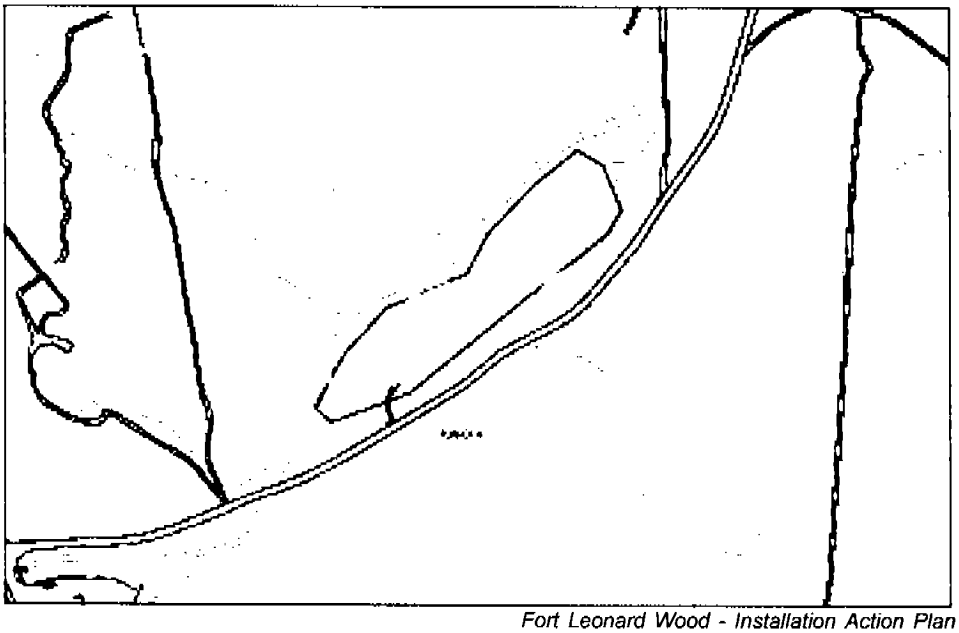
STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals, Chlorinated Solvents
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RC

PA was completed in September 1992, Final RCRA Facility Assessment Report for Fort Leonard Wood. This report was based on a visual inspection and sampling was not conducted. Based on funding limitations and RRSE, the installation did not pursue further investigation at this site. During the 2003 IAP workshop, the installation representative and the State regulator agreed that further investigation may be warranted.

PROPOSED PLAN

A record search (funded in FY03) is the last expected action at this site.



FLW-015
LANDFILL 11B (STP IV)

SITE DESCRIPTION

Landfill No. 11B is a closed sanitary landfill that operated between 1957 and 1958. It is north of Plant Road in the extreme northeast Cantonment Area and occupies 2.0 acres. Landfill No. 11B is northeast of Landfill No. 11A, SWMU 43. The landfill was used to dispose of household garbage. It is located on the edge of Dry Creek that feeds to Shanghai Spring. PCE has been detected in the Spring at levels below regulatory requirements. The source of the PCE has not been fully defined. During rain events, levels of PCE in Shanghai Spring increase indicating a source is close to the spring. The depth of the landfill is unknown. It is covered with vegetation (grasses and weeds), with no exposed debris. It is used for the land application of sewage treatment plant sludge.

Dye tracing, conducted in 1996 indicated that the landfill area and Shanghai Spring are hydraulically connected. The sewage treatment plant discharges downstream from the landfill area.

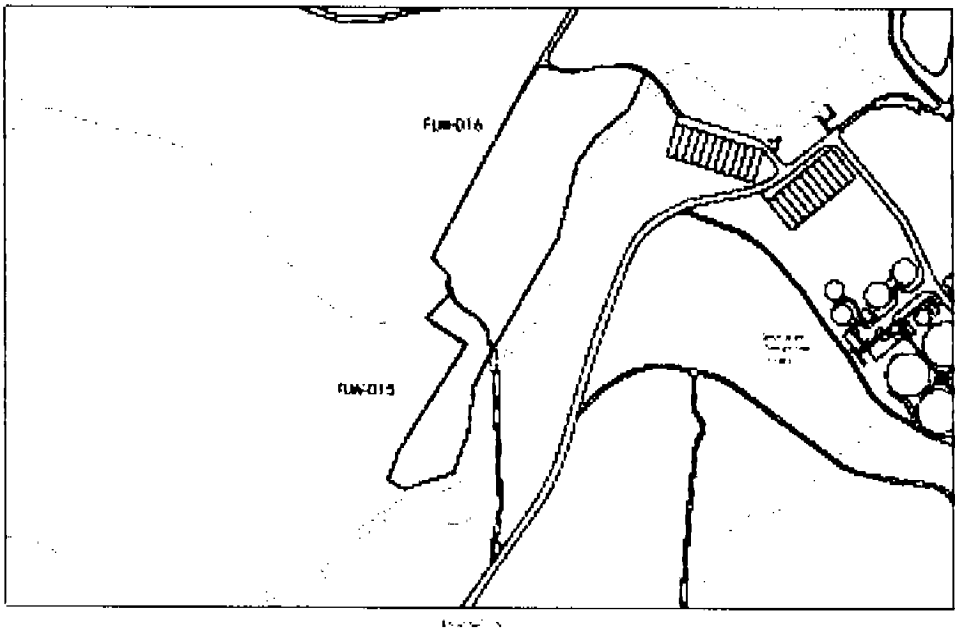
STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals, Chlorinated Solvents
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RC

PA was completed in September 1992, Final RCRA Facility Assessment Report for Fort Leonard Wood. This report was based on a visual inspection and sampling was not conducted. Based on funding limitations and RRSE, the installation did not pursue further investigation at this site. During the 2003 IAP workshop, the installation representative and the State regulator agreed that further investigation may be warranted.

PROPOSED PLAN

A record search (funded in FY03) is the last expected action at this site.



FLW-016
LANDFILL 11C (STP V)

SITE DESCRIPTION

Landfill No. 11C is a closed sanitary landfill that operated from 1960 for an unknown period of time. It is north of Plant Road near the STP, SWMU No. 26, northeast of Landfill 11B, SWMU No. 44. Landfill No. 11C occupies 6.1 acres. It is located on the edge of Dry Creek that feeds to Shanghai Spring. PCE has been detected in the Spring at levels below regulatory requirements. The source of the PCE has not been fully defined. During rain events, levels of PCE in Shanghai Spring increase indicating a source is close to the spring. The depth of the landfill is unknown. It is covered with vegetation (grasses and weeds), with no exposed debris. It is used for the land application of sewage treatment plant sludge.

Dye tracing, conducted in 1996 indicated that the landfill area and Shanghai Spring are hydraulically connected. The sewage treatment plant discharges downstream from the landfill area.

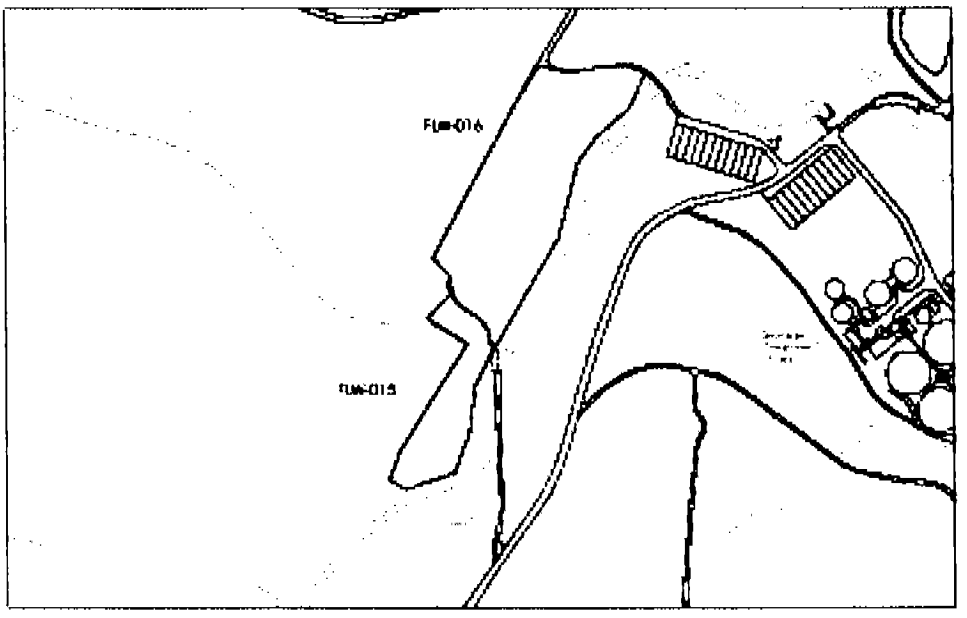
STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals, Chlorinated Solvents
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RC

PA was completed in September 1992, Final RCRA Facility Assessment Report for Fort Leonard Wood. This report was based on a visual inspection and sampling was not conducted. Based on funding limitations and RRSE, the installation did not pursue further investigation at this site. During the 2003 IAP workshop, the installation representative and the State regulator agreed that further investigation may be warranted.

PROPOSED PLAN

A record search (funded in FY03) is the last expected action at this site.



FLW-028
DPW OLD FIRE TRAINING AREA

SITE DESCRIPTION

The old fire training area was used to train FLW fire fighters between 1972 and 1988. The area is located in the central part of the facility, south of Forney Airfield and is roughly 100 feet by 400 feet. Training occurred twice a year and involved the ignition of 150 gallons of aviation fuel for each exercise. A concrete pad with containment berms was used to contain the burning fuel. The pad has since been removed, leaving a flat vegetated area. The area is bermed on three sides with earth berms 6 feet high and 10 feet wide.

The old fire training area was investigated in the "Sampling Visit" (USAEHA, 1990). Samples were taken at 2-3 1/2, 5-6 1/2, and 8-9 1/2 feet below the ground surface. All samples were analyzed for TCLP-metals, total petroleum hydrocarbon (TPH), volatile organics, and semi-volatile organics (USAEHA, 1990). Volatile organic analytical results indicated values reported for methylene chloride and acetone were 6-31 mg/kg and 13-75 mg/kg, respectively. Analysis for semi-volatile organics determined that Isophorone was detected in one borehole at 850 ug/kg (2-3 1/2 feet), 2130 ug/kg (5-6 1/2 feet), and 250 ug/kg (8-9 1/2 feet). The USGS collected 25 samples within the bermed area in 1995, sample analyses show low levels of BTEX present.

The area was paved in the late 1990s.

PROPOSED PLAN

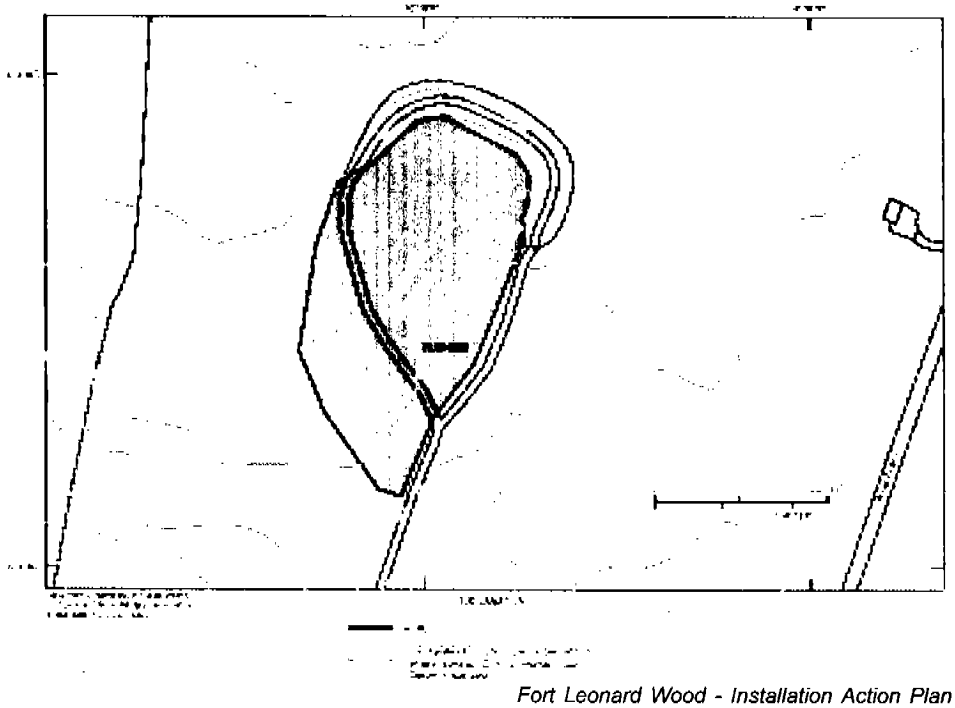
Sampling has indicated that there are low levels of BTEX contamination present, the RI will determine the nature of the contamination. With the current, limited information, no further action is expected to be needed.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
BTEX, Organics
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA, SI by USGS
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RI/FS

Constrained Cost to Complete

	2004	2005	2006	2007+
RI/FS				60
IRA				
RD				
RA				
LTO				
LTM				
Total	60,000			



FLW-056
FLW DRY CLEANING SHOP

SITE DESCRIPTION

FLW-056 is the site of a former dry cleaning and laundry facility (Building 2300) that was in operation from the mid 1940s until 1981. This site is approximately one-acre in size and is located at the southeast corner of the intersection of 1st Street and Louisiana Avenue. The building was demolished in 1987. The site is covered with grass and slopes slightly to the north. Prior to the 1970s, the facility used Trichloroethylene (TCE) and afterwards used PCE as a dry cleaning solvent.

The PA/SI was conducted between 1992 and 1999. A limited SI was done in FY97-98 to determine the potential for contamination and its migration to the ground water. Shallow (less than 3-feet deep) subsurface soil samples collected at the site contained large concentrations of PCE and TCE. Soil gas samples taken at the site contained PCE, TCE and other organic compounds. Samples from a nearby stream and storm sewer system contained PCE and TCE above MCLs.

The RI at this site began in 1999. The RI was initiated because of PCE detected in the soils at the site and water from a nearby creek, and because PCE was detected in Shanghai Spring (located off the installation). The MDNR is interested in the extent of contamination and the possible connection to the off post spring. Sample results from soil borings indicate PCE contamination to depths of at least 30-feet. Two monitoring wells were installed during 1999 and three additional wells in 2001. Samples from these wells indicate that PCE and TCE have migrated to the perched water zone (approximately 130-feet) and groundwater table (approximately 190-feet). An additional 3 wells were installed in 2003.

STATUS

RRSE RATING:
High
CONTAMINANTS:
PCE, TCE
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS, LTM

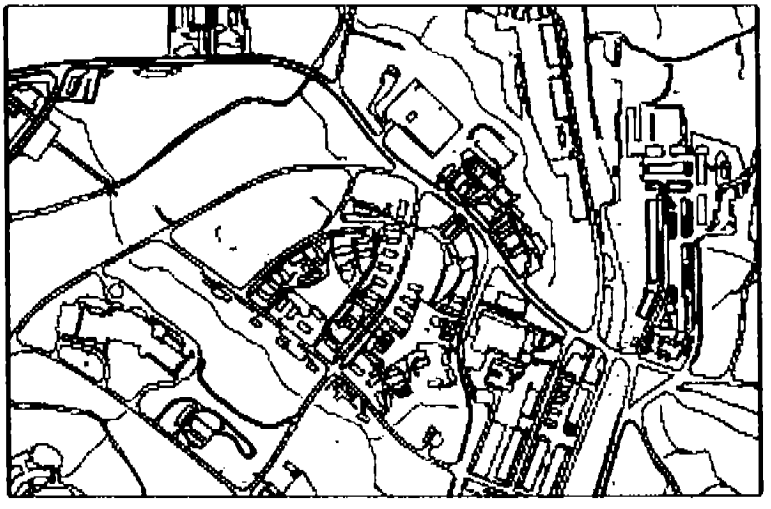
Constrained Cost to Complete

	2004	2005	2006	2007+
RI/FS	125	580		
IRA				
RD				
RA				
LTO				
LTM		135	135	1327
Total	2,302,000			

PROPOSED PLAN

Additional characterization/investigation along with sampling and other site data will be used to evaluate the vertical and horizontal extent of the contamination, potential migration pathways, and receptors. These objectives will be accomplished by drilling and sampling monitoring wells, and assessing the potential connection of this site to Shanghai Spring.

FLW may perform a pilot study during FY04 by excavating 2,500 yards of contaminated soil via an innovative technology to treat contaminated soil (ex-situ chemical oxidation). LTM will be conducted at this site.



FLW-059
MUNICIPAL LANDFILL ON SOUTH OF ROUBIDOUX (2)

SITE DESCRIPTION

FLW-059 is an inactive municipal solid waste trench and fill type landfill that was operated from 1958 until 1961. It is located in the northwestern corner of the Fort between Roubidoux Creek and Road FLW 8 on the Roubidoux Creek flood plain. The site is heavily vegetated with small trees and brush. The surface area is uneven and has standing water in the low areas. The existing cover has been eroded and trash is exposed in some areas. The known boundaries of the landfill have been fenced; however, the actual boundaries of the landfill probably extend beyond the fenced area. Signs have been placed around what is thought to be the boundaries to keep training activities from impacting landfill cover.

A US Army Toxic and Hazardous Materials Agency (USATHAMA) report was issued in 1982. The Missouri Department of Natural Resources wanted further investigation of the landfill because of its proximity to Roubidoux Creek.

The PA/SI at this site began in 1994. In 1995 USGS collected soil and sediment samples which were tested for inorganic constituents, pesticides, and PCBs. The results indicated no significant contaminants; however, one sample contained elevated concentrations of zinc. In 1997, four temporary shallow (less than 20-feet) monitoring wells were installed. The results indicated inorganic constituents above background. VOCs were also detected. Groundwater flow was determined to be west-northwest towards the Roubidoux Creek.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Chlorinated Solvents, Inorganics
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA
CURRENT IRP PHASE:
SI (funded)
FUTURE IRP PHASE:
RI/FS, LTM

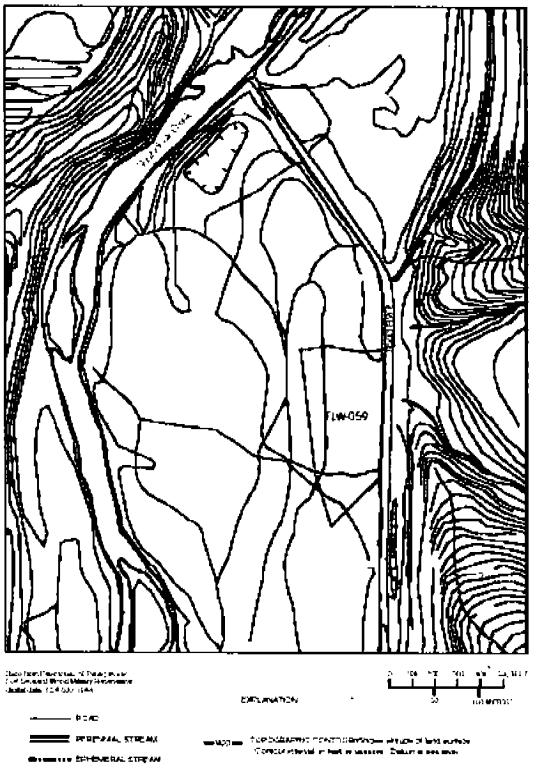
Constrained Cost to Complete

	2004	2005	2006	2007+
RI/FS		78	78	150
IRA				
RD				
RA				
LTO				
LTM				653
Total	959,000			

PROPOSED PLAN

Five additional wells will be installed in late FY03.

Site investigation sampling will determine if the landfill has contaminants migrating into the ground water, landfill cover repair necessary, monitoring wells, and closure before LTM.



FLW-060
LANDFILL ON A BRANCH TO BIG PINEY (EAST GATE RD)

SITE DESCRIPTION

Municipal solid waste landfill with unknown dates of operation. It consists of approximately 1.5 acres, located on a side drainage to the Big Piney River, off of the East Gate Road.

The landfill was not mentioned in the 1982 Installation Assessment Report number 322. It was not identified in the subsequent USAEHA studies. The MDNR wants further investigation because of it's proximity to the Big Piney River.

USGS sampling for the site showed low contaminant levels in the stream sediments. The iron concentration in sediments elevated the RRSE Rating, however the levels found were not above 95 percentile found in all sediment samples taken for FLW during the time period.

STATUS

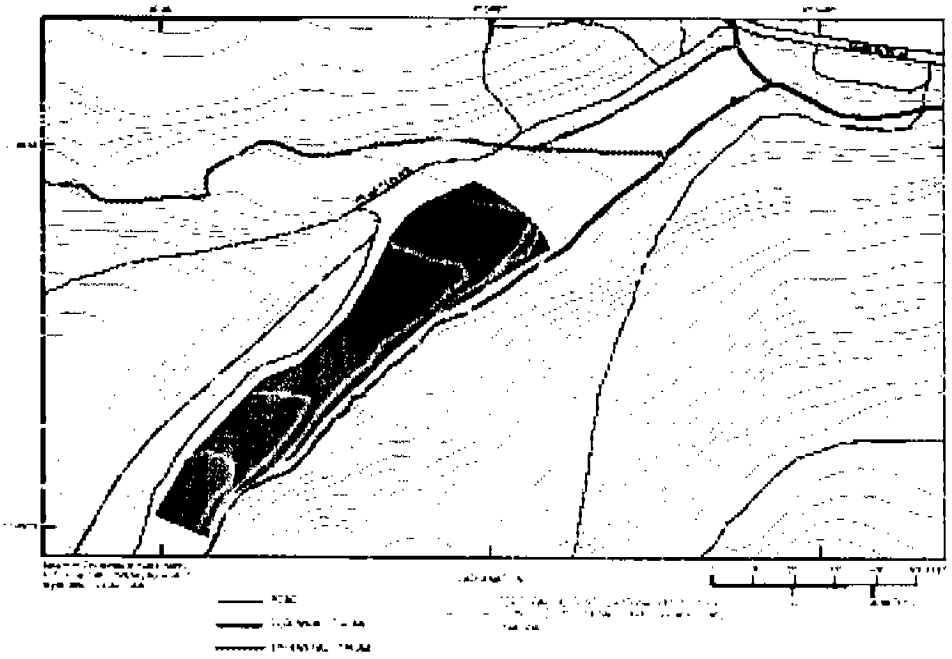
RRSE RATING:
Medium
CONTAMINANTS:
Household Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA
CURRENT IRP PHASE:
SI (funded)
FUTURE IRP PHASE:
RI/FS

Constrained Cost to Complete

	2004	2005	2006	2007+
RI/FS				136
IRA				
RD				
RA				
LTO				
LTM				
Total	136,000			

PROPOSED PLAN

Completion of RI/FS. With the current, limited information, no further action is expected to be needed.



Fort Leonard Wood

Missouri

RESPONSE COMPLETE SITES

FLW-001
LANDFILL 1 (BLOODLAND/ CUSTOMS)

SITE DESCRIPTION

This landfill is located 0.2 mile west of the intersection of roads FLW 1 and FLW 38 in the central portion of the post. It occupies approximately 3.2 acres, and is a closed sanitary landfill. It operated between 1942 and 1968. Presently, the landfill is completely covered with vegetation and no exposed trash is evident. Personnel from Fort Leonard Wood and MDNR did a walk over in May 1994 and found no evidence of subsidence or leachate. No EPR # associated.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1998

FLW-004
LANDFILL 3B (SOUTH WATER TOWER II)

SITE DESCRIPTION

This landfill site was redesignated as part of FLW-003 (Landfill No. 3A) during the conduct of the October 2000 IAP Workshop. This was done because it was determined that this landfill was originally part of FLW-003 and should not have been designated as a separate site. FLW-004 will be carried in DSERTS as Response Complete (RC).

All budgetary and clean up requirements will be carried forward under FLW-003.

STATUS

RRSE RATING:
High
CONTAMINANTS:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 2000

FLW-005
LANDFILL 3C (SOUTH WATER TOWER II)

SITE DESCRIPTION

This landfill site was redesignated as part of FLW-003 (Landfill No. 3A) during the conduct of the October 2000 IAP Workshop. This was done because it was determined that this landfill was originally part of FLW-003 and should not have been designated as a separate site. FLW-005 will be carried in DSERTS as Response Complete (RC).

STATUS

RRSE RATING:
High
CONTAMINANTS:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 2000

FLW-007
LANDFILL 5

SITE DESCRIPTION

Landfill number 5 is a closed construction debris landfill that operated between 1942 and 1950. It is located south of First Street in the east central cantonment. The landfill occupied 6.9 acres. Presently, the landfill is partially covered with asphalt and serves as a parking lot. The unpaved portions are completely vegetated.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-008
LANDFILL 6 (ROSE BOWL)

SITE DESCRIPTION

Landfill number 6 is a closed sanitary landfill that operated between 1942 and 1950. The landfill is southeast of the veterinary office and southeast of the intersection of Minnesota Avenue and Gas Street. It occupies 7.5 acres. The area is now completely covered with vegetation. FLW also open burned waste and buried the residue in this landfill.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, IRA
CURRENT IRP PHASE:
RC - 1988

FLW-009
LANDFILL 7

SITE DESCRIPTION

Landfill number 7 is a closed demolition landfill that was operated between 1942 and 1950. It is located southeast of Landfill number 5 and south of First Street and occupies .9 acres. It was used to dispose of construction debris and some household waste. The area is now covered with vegetation. It was not permitted.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-010
LANDFILL 8 (HORSE STABLES I)

SITE DESCRIPTION

Landfill number 8 is a closed demolition landfill that was operated between 1942 and 1980. It was used for open burning, with the residue being buried in this landfill. It is southeast of the intersection of roads FLW 8 and EE and occupies 11.4 acres. It is currently poorly vegetated and has some exposed garbage from unauthorized dumping.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, IRA
CURRENT IRP PHASE:
RC - 1988

FLW-011
LANDFILL 9 (HORSE STABLES II)

SITE DESCRIPTION

Landfill number 9 is a demolition landfill that was operated from 1950 to 1992. It is located south of FLW road 8, adjacent to landfill number 8. It was permitted under Missouri Department of Natural Resources number 216901. Final cover has been applied and is completely vegetated.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-017
LANDFILL 12 (ROUBIDOUX I)

SITE DESCRIPTION

Landfill No. 12 is a closed sanitary landfill that operated between 1958 and 1961. It is in the northwest portion of FLW, near Roubidoux Creek and occupies 7 acres. The landfill is adequately covered with vegetation and has no exposed debris. Landfill No. 12 does show some areas of surface subsidence. Parts of the landfill are within the construction footprint of the new west lake access road which is scheduled for completion in 2006. Geotechnical borings for the road construction show no significant contamination.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-018
LANDFILL 13

SITE DESCRIPTION

Landfill number 13 is a closed demolition landfill that operated between 1960 and 1970. It is south of TA 294 near the intersection of roads FLW 20 and FLW 5 and occupies 1.4 acres. It was used for disposal of demolition and construction debris. It is adequately vegetated but has some areas of subsidence.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-019
LANDFILL 14

SITE DESCRIPTION

Landfill number 14 is a closed demolition landfill operated from an unknown initial date to the late 1950s. It is east of Gas Street in the present DRMO operational area and occupies 9.5 acres. The area is now used for a salvage yard and storage area. The PA/SI conducted by USAEHA revealed no contamination.

RFA report issued by USEPA following the 9/10/91 VSI recommended no further action.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-020
LANDFILL 15 (HEAT RECOVERY INCINERATOR)

SITE DESCRIPTION

Landfill number 15, is the closed sanitary landfill. It is west of road FLW 1 and north of road FLW P, and occupies 37 acres. It was in operation from 1985 to 1994 and operated under permit number 116909. It received incinerator ash from the hospital, veterinary, and heat recovery incinerators, and household waste and demolition debris. It no longer receives waste and has been closed. The storm-water permit requires quarterly monitoring for criteria pollutants.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-021
MEDICAL WASTE INCINERATOR

SITE DESCRIPTION

The incinerator was in the east dock area of Building 310. The incinerator was used to dispose of medical and infectious wastes generated at the hospital at a rate of 12 pounds per 35 minutes. It has been in operation since 1983 and was operated until 1990 under the MDNR permit number 0278-008. An updated incinerator was installed in 1990 with a capacity of 139 lbs per hour and was operated under MDNR permit number 0590-004. Stack test data is on file in the Environmental Office. The ash was tested every 6 months for TCLP, and was sent off post to a sanitary landfill. It was located in a closed secured building. The incinerator was taken out of operation and closed in the early 1990s.

RFA report issued by USEPA following the 9/10/91 VSI recommended no further action.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Medical & Infectious Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-022
VET LAB INCINERATOR

SITE DESCRIPTION

The FLW veterinary clinic is in Building 2399. The clinic generated animal and laboratory wastes that were disposed of in an incinerator located in the clinic. The incinerator operates under MDNR Permit No. 0983-019 and was not a continuously operating incinerator. Approximately 55 gallons of wastes were burned once a week. The incinerator was put into operation in 1984 and shut down in 1992. There are no emission controls on the incinerator. The ash from the incinerator was tested in 1990 and passed the TCLP. Ash was disposed of in the post sanitary landfill.

RFA report issued by USEPA following the 9/10/91 VSI recommended no further action.

Because the incinerator did not meet new incinerator regulations, it was shut down in June 1993. It has been removed from the building. The incinerator was decommissioned in June 1993.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Medical & Infectious Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-023
BOILER PLANT BUILDING 663

SITE DESCRIPTION

This was a municipal solid waste incinerator and heat recovery unit with a rated capacity of 75 tons per day which normally operated at a rate of 35 tons per day. It was located in building 663 and was decommissioned in 1991. The plant went into operation in 1980, and was used to incinerate solid waste from the post. Waste oil was used as a secondary fuel. Ash was disposed of in the sanitary landfill. The plant was shut down because it could not meet Clean Air Act Amendment without costly modification. The plant was converted to a transfer station in 1991 and continues to operate as such. It now operates under MDNR permit number 416901.

RFA report issued by USEPA following the 9/10/91 VSI recommended no further action.

The incinerator was decommissioned in December 1991. The building is currently a standby permitted solid waste transfer station.

STATUS

RRSE RATING:
NE
CONTAMINANTS: Hazardous Waste, PM-10, HCl, SO, Metals
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC - 1992

FLW-024
SEWAGE TREATMENT PLANT

SITE DESCRIPTION

This sewage plant is located in the northeast corner of the cantonment, on Plant Road. It has been in operation since 1940 and is currently operated by Rust contractors, the post operations contractor. It treats 3.5 mpg of sewage and storm-water. It is composed of bar screens, aerated grit chamber, two primary clarifiers, two high rate trickling filters, two secondary clarifiers, chlorine contact basin, two anaerobic digesters, and twenty-one drying beds. Discharge is into Dry Creek, which in turn flows into the Big Piney River. The discharge is covered by NPDES No. MO-0029742. Instead of pumping sludge to the drying beds, it is pumped into a sludge holding basin, and then pumped into a tanker truck and land applied.

NFRAP report issued by USEPA following the 9/10/91 VSI recommended no further action.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-025
WATER TREATMENT PLANT LAGOON

SITE DESCRIPTION

The Water Treatment Plant Lagoon is located 400 feet south of the plant and occupies 250,000 square feet. Waste from back-washing at the plant is discharged into the lagoon. The lagoon, operated since 1941 and discharges into the Big Piney River at a rate of 135,000 gpd. It operates under Permit No. MO-0058068.

NFRAP Report issued by USEPA following the 9/10/91 VSI recommended no further action.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-026
SEWAGE TREATMENT PLANT LAGOON SITE

SITE DESCRIPTION

The Sewage Treatment Plant Lagoon, 0.35 acres in size, and located 700 feet northeast of the plant, was used to hold digester waste from 1967 to 1986. Remediation took place under the supervision of the Kansas City District Corp. of Engineer and consisted of silt removal. Soil was taken to landfills 10A, 10B, 11A, 11B, and 11C.

NFRAP report issued by USEPA following the 9/10/91 VSI recommended no further action.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-027
TRAINING AREA 244 SEWAGE LAGOONS

SITE DESCRIPTION

Two sewage lagoons, 100 by 125 feet in size, are used to treat sewage from buildings of the training area. Effluent, which flows to the Roubidoux Creek, is regulated under NPDES permit MO-0029751. The lagoons are bermed to prevent spillage.

NFRAP Report issued by USEPA following the 9/10/91 VSI recommended no further action. The lagoon has been drained the sludge solidified or removed, and the sides pushed in.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC - 1994

FLW-029
NEW FIRE TRAINING AREA

SITE DESCRIPTION

The new fire training area is the current in use fire training area. It has been in operation since 1988. It is west of the old fire training area, SWMU No. 5, and is roughly 100 by 400 feet. Aviation fuel (150 gallons) is ignited twice a year as fire fighting training. The fuel is contained in a concrete pad with secondary containment measures. The concrete pad appeared to be in good condition. No cracks or staining was visible on the pad. The entire area is surrounded by earth berms 6 feet high and 10 feet wide. A 10,000-gallon aboveground storage tank (AST) is also located on the site to store aviation fuel. Fifty-five gallon drums shown in the photograph in the RCRA Facility Assessment are used to store fuel products.

NFRAP Report issued by USEPA following the 9/10/91 VSI recommended that no further action be taken.

STATUS

RRSE RATING: NE
CONTAMINANTS:
Kerosene, benzene, toluene, xylene, VOCs
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-030
OLD EOD OB/OD AREA RANGE 24

SITE DESCRIPTION

A small portion of range 24 was used as an OB/OD area from an unknown time to 1976. The area is located in the south part of the facility, south of road FLW D and west of road FLW 1 and according to description of unknown origin, occupied 2,700 square feet. The area was used for the destruction of excess or unusable munitions. The OB/OD pit is not distinguishable because of extensive range use at present. Range 24 is poorly vegetated because of active range exercises.

Soil sampling was planned by USAEHA in 1990, but the range was in use and not subject to RCRA requirements. It was not a permitted TSD facility. The area will continue to be used as a multipurpose range.

Sediment from nearby drainage areas, area seep and spring sampling done by USGS in 1995 revealed no contamination.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
TCLP Metals, Explosives
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1995

The current plan is to submit sampling data to the state and recommend that no further action be required.

The results of the sampling and analysis will be presented to MDNR with a request for no further action.

FLW-031
CURRENT EOD OB/OD AREA RANGE 36

SITE DESCRIPTION

Range 36 is currently used to open detonate (OD) waste munitions and explosives. Open burning (OB) is no longer conducted at the FLW facility. OB was discontinued in 1988. The OD and OB pits are L-shaped pits approximately 3 feet deep, occupying 1,000 square feet. The pits are earthen pits constructed simply by excavation of soil. It is north of road FLW W in the western portion of the FLW facility. The site has been operational since 1976. The OB pit is still visible and is separate from the OD pit by several hundred yards. Diesel fuel and other flammable petroleum based fuels were added to the waste munitions during previous OB operations to ensure complete combustion.

Soil samples were taken from the OB pit and OD pit by FLW DPW personnel in November 1988. Soil samples were analyzed for volatile organics using EPA Method 8240. However, analytes were detected in the blank. It is not known why these analytes were detected in the blank. A figure indicating the soil sampling locations was not available at the time of the RFA. The wells at this location were sampled by USGS in 1995 and no contamination was found. A final closure of the treatment site is under way at this time. It will continue to be used for training.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
TCLP Metals, Explosives
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-032
CANNON (RANGE) ANG OB AND BURIAL SITE

SITE DESCRIPTION

Air National Guard personnel collected dud bombs from the bombing range and put them in an open pit, added fuel oil and burned them. The pit is approximately 4 feet deep by 6 feet wide and 100 feet long. OB took place semi annually between 1982 and 1988 to destroy the duds. After OB, the bombs were buried in a burial pit 100 yards west of the OB pit. Samples were taken by USAEHA at six surface locations in the pit. The samples were tested for TCLP Metals and explosives (RDX, HMX, 2,4,6-trinitrotoluene (TNT), 2,6-dinitrotoluene (2,6-DNT), 2,4-dinitrotoluene (2,4-DNT)). Analysis for TCLP-metals determined that all samples had metals content below each metals' individual detection limit. Analysis for explosives determined that no explosives were detected above their individual detection limit (USAEHA, 1990). The burial site may possibly have live munitions buried at the site. For this reason, sampling activities were not undertaken at the burial site.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
TCLP Metals, Explosives
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1995

Sampling of area soils, sediments, and spring water taken during the Site Investigation found no contamination. The sampling and analysis information for the site will be sent to MDNR with a recommendation for no further action.

FLW-033A-033K
WASTE (USED) OIL USTs

SITE DESCRIPTION

FLW-033A, UST Bldg 663, 601, 2502, 2550 Waste (Used) Oil These were removed and not replaced.

FLW-033B, AST Bldg 777, 170, 1390 Waste (Used) Oil. These tank have secondary containment.

FLW-033C, AST Bldg 875, Waste (Used) Oil

FLW-033D, AST Bldg 1383, 2581, 2250, 2212 Waste (Used) Oil

FLW-033F, UST Bldg 2502, 5069, 5053, 950 Waste (Used) Oil

FLW-033G, UST Build 2553 Waste (Used) Oil Tank 500 Gal

FLW-033H, UST Bldg 4050, 4060 Waste (Used) Oil

FLW-033I, UST Build 5071 Waste (Used) Oil Tank 1,000 Gal

FLW-033J, UST Build 5071 Waste (Used) Oil Tank 500 Gal

FLW-033K, UST Building 5074 (4 Tanks)

STATUS

RRSE RATING:
NE
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC - 1988-93

These tanks were removed and closed in accordance with MDNR closure guidance. These tanks were replaced with ASTs. Remaining USTs have been upgraded to meet all state requirements.

FLW-034
ASTs @ 600MP, 900MP, 1390

SITE DESCRIPTION

Eleven used oil and used fuel (AST) were investigated during the VSI. The location, tank contents, tank capacity, installation date, removal date, material of construction, origin of waste, Roll No., and Photograph No. for each tank is presented in Table 4-5 of the RFA report. AST locations are plotted on Figures 4-1 through 4-7 of the RFA report.

RA was completed on those tanks at which EPA reported spillage. Work completed on Service Order # 06527, 06530, and 05788.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Waste Oil
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-035
DEH USED TRANSFORMER AREA 2222, 2221

SITE DESCRIPTION

The DPW used transformer storage area is between Buildings 2221 and 2222. This area is used for storage of transformers containing non-PCB oil. Transformers that contain PCB transformer oil are stored in Building 2229, SWMU No. 11. Transformers awaiting analysis to determine if they contain PCBs are also stored in Building 2229. After an analyses determines that a transformer does not contain PCBs, the transformer is placed in a drip pan and transported from SWMU No. 11 to SWMU No. 10. PCB containing transformers are ultimately disposed of through the FLW hazardous waste disposal contractor.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
PCBs
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC - 1993

FLW-036
DEH HAZARDOUS WASTE STORAGE AREA BLDG 2229

SITE DESCRIPTION

Building 2229 is located in the DPW area in the west-central Cantonment Area. DPW personnel constructed the facility in 1984 to store hazardous wastes until disposal by hazardous waste disposal contractors. Arrangements for disposal are made by the DRMO. This building is the FLW less than 90 day storage area. This will require the closure of the current waste storage area, SWMU No. 11. The building is a secured, metal-sided building with a sealed concrete floor. The inside of the building is bermed to prevent spills from migrating outside the building. It is approximately 40 feet wide and 60 feet long and is equipped with explosion proof lighting.

Adjacent to Building 2229 is a temporary hazardous waste storage building, designated 2229B, that was specifically designed to store flammable hazardous waste. The building has three separate fireproof compartments to prevent incompatible wastes from coming into contact with each other. Waste flammable liquids and waste corrosive liquids are stored in this building. Each compartment is approximately 8 feet wide and 10 feet long. Each of the three fireproof compartments open to the outside with a locking metal door.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1988

FLW-037
DEH OLD PESTICIDE STORAGE AREA BLDG 2206

SITE DESCRIPTION

The Directorate of Public Works (DPW) Old Pesticide Storage Area is in Bldg 2206 within the DPW compound in the east-central portion of the cantonment area. The building was used from 1966 to 1981 to mix and store pesticides used at the FLW facility. Pesticides and pesticide rinsate were stored in drums inside the building. The building did not have secondary containment. Some unused pesticide rinsate was disposed of on the ground at the northeast end of the building. Bldg 2206 had a concrete floor with a floor drain, and the floor drain was connected to the sanitary sewer system. The floor appeared to be in good condition at the time of the VSI. Since the building was used for this purpose before the regulation of pesticides, it is possible that some currently prohibited pesticides may have been used or disposed of in Bldg 2206. The site was included in the "Sampling Visit", conducted in Sept 1990, in which 6 soil samples were taken to determine if a release has occurred to the soil.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Pesticides
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, RI, RD, RA
CURRENT IRP PHASE:
RC - 1999

Further sampling by USGS in the Site Investigation confirmed contamination in the soils near the building and in an adjacent drainage. USGS also conducted building structure samples and analyzed for TCLP pesticides prior to it's demolition and disposal. No contamination was found and the building debris was disposed of in a sanitary landfill.

The removal of contaminated soil and concrete slab has been completed. The final closure plan was submitted to and commented on by the MDNR.

FLW-038
DOL WASTE BATTERY ELECTROLYTE STORAGE AREA

SITE DESCRIPTION

The old acid storage area is outside behind Building 2563, now a shipping and receiving facility, as shown on Figure 4-3 of the RFA. Waste sulfuric acid, drained from used lead acid batteries, was stored outside directly on the ground in plastic drums while awaiting disposal from an unknown date to January 1987. Waste acid is generated at FLW at a rate of 200 gallons per month. Up to 1,500 gallons of sulfuric acid was stored at this location. Currently, the acid is neutralized and dumped into the sanitary sewer system within the DOL maintenance shop, SWMU No. 17. Sludge from the neutralization process is sent to an off-site hazardous waste landfill. The site was surrounded by a trench and berms as secondary containment, as shown in Roll No. 2, Photograph No. 4 and 5 (Appendix A) in the RFA report, but the site has been covered with crushed rock and re-graded. In addition, waste dry cleaning solvent (tetrachloroethylene) was also stored at this location awaiting off-site disposal. Low levels of contamination were found during the Multi-Site RCRA Investigation conducted by Radian Corporation in reported in June 1993. It is possible that it was caused by lab contaminants. This area will also be analyzed for contamination by USGS in conjunction with the investigation at the Dry Cleaning facility.

STATUS

RRSE RATING: NE
CONTAMINANTS: Sulfuric Acid, Battery Sludge, Furniture Stripping Solvents, Waste Arc Welding Flux, Waste Glass Beads, Waste Paint, Dry Cleaning Solvents
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE: PA/SI
CURRENT IRP PHASE: RC - 1997

FLW-039
DRMO SCRAP YARD

SITE DESCRIPTION

The site occupies 9.5 acres on the northeast corner of the cantonment near Building 2391, on Gas Street. The site serves as a temporary storage yard for waste material and property awaiting sale by DRMO personnel. The items stored at the DRMO scrap yard are recyclable or reusable.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Hazardous Waste, PCBs, CFC
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RI/FS - 1988

FLW-040
AMMUNITION CONTAINER STORAGE AREA

SITE DESCRIPTION

The ammunition container storage area is used to store waste ammunition containers at a 3-acre ammunition supply point. Waste ammunition containers are constructed of wood, some of which have been treated with pentachlorophenol (PCP). PCP treated containers are stored outside on the edge of a concrete pad. Ammunition container storage personnel did not permit photographs to be taken of the storage area. The concrete pad is approximately 75 feet wide and 100 feet long. The pad appeared to be in good condition. No cracks or staining were visible on the pad. The container pad is not covered or surrounded by berms to prevent release. The ammunition supply point is south of road FLW 36 on road FLW 15. FLW is currently not receiving any additional PCP treated containers. The storage area has been operational since 1981. PCP treated containers have been stored at this location since 1985.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Pentachlorophenol (PCP)
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1995

No contamination was found. The results of the analysis of soil from the vicinity of the pad, and sediment from nearby drainages, along with other site information will be sent to the MDNR with a request that no further action be taken.

FLW-041
SAINT LOUIS ORDNANCE PLANT

SITE DESCRIPTION

This site is not in DSERTS. The property has since been transferred to the 89 Reserve Support Command.

It is located in the northwestern border of the city of St. Louis, Missouri, where it joins St. Louis County. Most of the installation is located within the corporate limits of the city of St. Louis. SLOP began production in 1942 and was used for the production of small arms ammunition and 105 mm shells. It was used until 1969 for ordnance production but subsequent use has been made of a portion of the installation for explosive production through lease to private industry. The original installation occupied 279.5 acres but Fort Leonard Wood is current owner of 14.7 acres known as the Hanley Area. Details of the plant and investigations are at the Environmental Office in a USATHAMA report titled St. Louis Ordnance Plant Environmental Study. This property was transferred in FY97 to the 89TH Reserve Support Command.

STATUS

RRSE RATING:
not in DSERTS
CONTAMINANTS:
Explosives, Asbestos, Metals, PCBs
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC

A Survey of Hazardous/Chemical Area number 2 was conducted by THAMA in 1981. Contamination survey done by THAMA in 1991.

FLW-042
60 ABANDONED USTs (from Demolished Bldgs)

SITE DESCRIPTION

Heating oil tanks were abandoned when the World War II buildings were demolished. The buildings were located through out the cantonment.

Tanks and visible contamination were removed. There is no state closure requirement for heating oil tanks.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Petroleum Hydrocarbons
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA, RA
CURRENT IRP PHASE:
RC - 1993

FLW-043
WWII BUILDINGS (152) (DEMOLITION)

SITE DESCRIPTION

This was considered a site when building demolition was still considered ER,A eligible.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
None
MEDIA OF CONCERN:
None
COMPLETED IRP PHASE:
PA, RA
CURRENT IRP PHASE:
RC - 1993

FLW-044
CONTAMINATED AREA FROM UST, BLDG 2563

SITE DESCRIPTION

The old battery shop was in a small room in Building 2563, now a shipping and receiving facility, as shown on Figure 4-3 in the RFA report. The old battery shop room is approximately 30 feet by 30 feet and was used from 1983 to 1987. The battery shop is now located in the DOL maintenance shop in Building 5265, SWMU No. 17. The only interim status storage area, this unit ceased acceptance of waste in 1981, when the storage of waste was commenced in an outside area. Formal RCRA Closure was started in 1990, with a round of sampling. A closure plan has been developed but has yet to be submitted to the Department of Natural Resources.

The building also had a leaking UST associated with it for heating fuel. The tank was removed and a site assessment was done and contaminated soil was removed. The first clean up done in accordance with the amounts of soil identified by the site assessment was not adequate. More money was then requested to complete the removal. The UST was not associated with the Part A permitted facility so the clean up was eligible for ER,A funds.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Battery Acid, POL
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA, RA
CURRENT IRP PHASE:
RC - 1993

FLW-045
6 UST (LEAKING) NEAR BUILDING 810

SITE DESCRIPTION

Heating fuel tanks associated with this building were found to be leaking. A site assessment was done and the tanks removed. All contaminated soil was removed and the site was closed in accordance with State closure requirements.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA, RA
CURRENT IRP PHASE:
RC - 1992

FLW-046 BLDG 2291 - SOIL ASPHALT STORAGE AREA (DPW STORAGE YARD)

SITE DESCRIPTION

The DPW salvage yard is in the DPW portion of FLW in the west-central portion of the Cantonment Area, as shown on Figure 4-5 of the RFA report. The salvage yard is an inactive facility that contains unused appliances, scrap metal, waste wood chips, and unused containers of chlorofluorocarbons used as refrigerants. The salvage yard also contains nine ASTs, which were used to hold waste oil from the various motor pools at the FLW facility. These tanks are no longer in use and are not listed in Table 4-5 of the RFA report. A concrete trench extends from the tanks to an oil/water separator. The oil/water separator is a concrete basin designed to separate oil and water by differences in density. In addition, there are drums of waste oil in an outside storage area stored directly on the ground in several locations at the DPW Salvage Yard, as shown in Roll No. 1, Photograph No. 19 through 25 (Appendix A) of the RFA report. It is estimated that use of the salvage yard began in the 1960s.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Waste Oil
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC - 1995

Only the portion of the site related to the cleanup of the oil water separator and storage tanks is NFA. The remainder of the site could be subject to further action if the MDNR chooses.

FLW-047 USTs 990 (FLW DEVICE SHOP)

SITE DESCRIPTION

The FLW Device Shop is in Building 1448 in the Cantonment Area, as shown on Figure 4-4 in the RFA report. Activities within the shop that generate hazardous waste are the use of paint thinners and solvents used in plastic molding. Wastes are accumulated in 5-gallon containers inside the building. Hazardous wastes are generated at approximately 5 gallons per month and disposed of through hazardous waste contractor. Waste containers are not protected with secondary containment.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Paint Thinners, VOCs
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC - 1994

FLW-048
BOILER UST @ 311, 745, 1021, 675 (REMOVAL)

SITE DESCRIPTION

Number 6 heating oil tanks were abandoned when the boiler plants were fitted to burn natural gas. The tank 1 and 2 are located at building 645, tanks 3 and 4 are located at building 311, and tanks 5, 6, 7, and 8 are located at building 745. The tanks have been removed, the contamination removed, and the tank sites closed in accordance with state regulations for underground tanks.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
POL
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC - 1995

FLW-049
DOL MAINTENANCE SHOP

SITE DESCRIPTION

This site is still in operation and therefore not eligible for IRP funds.

The Directorate of Logistics (DOL) maintenance shop is in Building 5265 in the Cantonment Area, as shown on Figure 4-6 in the RFA report. Within the maintenance shop are five operations that generate hazardous wastes: a battery shop, paint and body shop, furniture repair shop, glass bead blasting, and arc welding, as shown in Roll No. 5, Photographs No. 1 through 3 and 8 (Appendix A) of the RFA report. The DOL maintenance shop has been in operation since 1987.

The battery repair shop, formerly in Building 2563, generates waste sulfuric acid from battery draining. Waste acid is neutralized by a neutralization system within the shop. Neutralized acid is discharged into the sanitary sewer system. The FLW paint and body shop generates waste paint and solvents used to repair and paint motor vehicles. These wastes are accumulated in satellite accumulation areas awaiting disposal through hazardous wastes disposal contractors. Within the FLW paint and body shop, glass bead blasting operations used to remove paint from vehicles, also generates hazardous wastes. Waste glass beads are accumulated in 55-gallon drums.

STATUS

RRSE RATING: NE
CONTAMINANTS: Wastes generated are sulfuric acid, waste sludge from acid neutralization (D002), furniture stripping solvents, waste arc welding flux, waste glass beads (D008), and waste paint and solvent
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE: PA/SI
CURRENT IRP PHASE: RC - 1992

After accumulation, the drum containing the waste beads is stored in Building 2229 awaiting disposal. Waste glass beads, generated at 120 gallons per month, are above TCLP limits for lead. The lead is generated from the paint removed from the vehicles. The glass bead wastes are disposed of as a hazardous waste by the DRMO. FLW personnel did not know how the disposal facility handled the waste beads. Furniture repair and stripping generate hazardous waste solvents. Waste solvents are collected in 55-gallon drums, then are disposed of by hazardous waste contractors. Waste arc welding flux generated from welding operations is above TCLP limits for lead. Waste flux is stored in 55-gallon containers awaiting disposal by hazardous waste contractors. Waste flux is generated at 120 gallons per year and collected in filter fabric bags inside the glass bead blasting device.

Hazardous waste contractors remove waste from the shop approximately once a month.

FLW-050
ROLL DENTAL CLINIC

SITE DESCRIPTION

This site is still in operation and therefore not eligible for IRP funds.

The Roll Dental Clinic generates silver solutions from x-rays taken at the clinic and other medicinal wastes. The silver solutions are taken to the FLW Community Hospital for silver recovery; while medicinal wastes are picked up for disposal by a licensed contractor. Roll Dental Clinic is located west of Nebraska Avenue, as shown on Figure 4-5 of the RFA report. Waste mercury solutions are also generated at the clinic. Silver and mercury solutions are accumulated up to 5 gallons in separate containers. Wastes are then stored in Building 2229 awaiting off site disposal.

STATUS

RRSE RATING: NE

CONTAMINANTS: Wastes handled at the dental clinic are silver solutions (D011), mercury solutions (D009) from tooth filling practices

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE: RC - 1992

FLW-051
FLW COMMUNITY HOSPITAL

SITE DESCRIPTION

This site is still in operation and therefore not eligible for IRP funds.

The hospital is in building 310. Xylene waste from the hospital laboratory and out of date pharmaceuticals are piped to and stored in the basement. Waste Xylene is disposed of through Safety Kleen. Silver waste solutions from x-rays and photographs are also stored in the basement. The storage area in the basement is a secured room used only for storage of waste. The room is approximately 15 by 25, and has no secondary containment. In addition, a silver recovery unit is operated in the basement in which silver is precipitated from solution. The silver is disposed of through DRMO and the supernate goes to the sewer. No wastes are accumulated in excess of 90 days.

STATUS

RRSE RATING:
NE

CONTAMINANTS: Waste xylene, silver solution, methanol

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
RC - 1992

FLW-052
WATER TREATMENT PLANT

SITE DESCRIPTION

This site is still in operation and therefore not eligible for IRP funds.

The plant is located in building 1601. Operated by Rust contractors, the plant processes 3 million gallons per day. 90% of the water processed is taken from the Big Piney River, with the balance coming from deep wells. It has been in operation since 1941. Backwash from the plant goes to the lagoon FLW-025.

STATUS

RRSE RATING: NE
CONTAMINANTS: Alum, sodium hydroxide, chlorine gas, hydrofluoric acid
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1992

FLW-053
OLD FIRE TRAINING AREA AT LANDFILL 3

SITE DESCRIPTION

This area was used from 1972 to 1977. It is located in the southern part of the cantonment, and consisted of a 3 foot deep by 30 foot round pond. It is not known if the area had secondary containment. There was no closure done. Sampling was done by AEHA and no contamination was found. The site was identified after the VSI and was therefore not visited by EPA.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Gasoline, Diesel, JP-4, Waste Oil
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

FLW-054
OLD FIRE TRAINING AREA RUNWAY END

SITE DESCRIPTION

This area was used from 1964 to 1977. It is located in the southern part of the cantonment, but it's actual size is not known. It is not known if the area had secondary containment. There was no closure done. Sampling was done by AEHA and no contamination was found. The site was identified after the VSI and was therefore not visited by EPA.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Gasoline, Diesel, JP-4, Waste Oil
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

FLW-055
OLD FIRE TRAINING AREA BALL FIELD

SITE DESCRIPTION

This area was used from 1952 to 1964. It is located in the cantonment, but it's actual size is not known. The area reportedly had secondary containment. There was no closure done. Sampling was done by AEHA and no contamination was found. The site was identified after the VSI and was therefore not visited by EPA.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Gasoline, Diesel, JP-4, Waste Oil
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

FLW-057
ENTOMOLOGY LABORATORY

SITE DESCRIPTION

The entomology laboratory is in the west-central portion of the Cantonment Area, as shown on Figure 4-3 of the RFA report. The entomology lab has been in use since 1981. The laboratory is inside on a concrete floor approximately 50 feet long and 40 feet wide. The Entomology Lab at FLW generates spent carbon and rinsates contaminated with pesticide. Pesticides used at the FLW facility are mixed in the laboratory before application. Rinsates are treated in an activated carbon adsorption system before storage and disposal, as shown on Roll No. 1, Photograph No. 17 and 18 in the RFA report. At one time a UST existed near Building 2273. FLW personnel stated that the UST has been excavated, but was never used when it was in place. Since the UST has been removed, it is not included in Table 4-4 of the RFA report. Pesticide rinsates were also sprayed over landfills to control insects. Pesticides products encountered in Building 2273 are listed in Appendix B of the RFA report. The laboratory is operated by Vail Pest Control. Approximately one 55-gallon drum of spent carbon was stored in the entomology lab at the time of the VSI.

STATUS

RRSE RATING: NE
CONTAMINANTS: Battery Acid, Spent carbon from rinsate treatment in the activated carbon adsorption system. The carbon may be a hazardous waste.
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE: PA/SI
CURRENT IRP PHASE:
RC - 1992

FLW-058
FLW DEVICE SHOP BUILDING 1448

SITE DESCRIPTION

This site also includes the Leaking UST Building 990.

Motorpool area, built in 1943, currently in use with 2 regulated diesel underground tanks. It is undergoing a renovation in order to service the new Motor Transport Operators Course (MTOC). During the investigation for the MTOC renovation, some soil gas work was done which showed potential for contamination. The tanks were removed and a site assessment done. Tank and piping leaks were found.

REM of UST Tanks have been removed, site assessment completed and money received on Dec 7, 1993 to remove contaminated soil.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Diesel Fuel
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1992

Schedule

PAST MILESTONES

Start Date of IRP at Installation: 1985

FUTURE MILESTONES

Estimated Completion Date of all RA Activities: 2009
Estimated Completion Date of IRP at Installation: 2017

NO FURTHER ACTION SITES

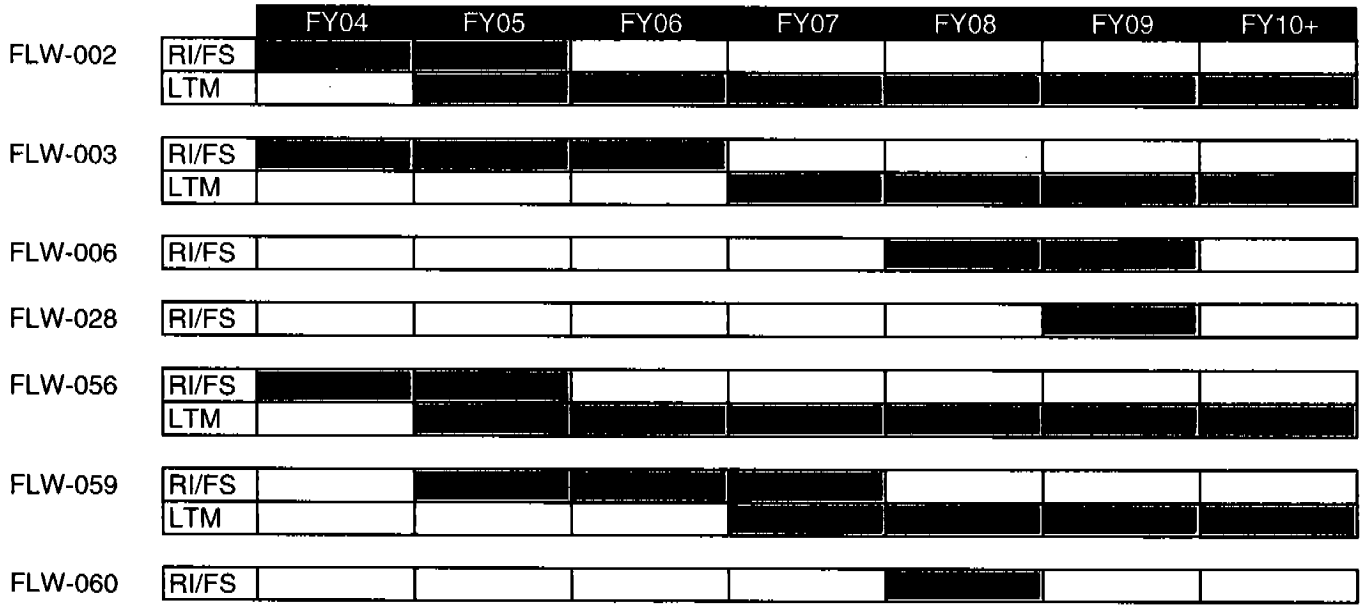
The following sites currently require no further action by the ER,A Program:

DSERTS #	Title	RC Date
FLW-001	LANDFILL 1	198807
FLW-004	LANDFILL 3B	200010
FLW-005	LANDFILL 3C	200010
FLW-007	LANDFILL 5	198807
FLW-008	LANDFILL 6	198807
FLW-009	LANDFILL 7	198807
FLW-010	LANDFILL 8	198807
FLW-011	LANDFILL 9	198807
FLW-012	LANDFILL 10A	199812
FLW-013	LANDFILL 10B	199812
FLW-014	LANDFILL 11A	199812
FLW-015	LANDFILL 11B	199812
FLW-016	LANDFILL 11C	199812
FLW-017	LANDFILL 12	198807
FLW-018	LANDFILL 13	198807
FLW-019	LANDFILL 14	198807
FLW-020	LANDFILL 15	198807
FLW-021	MEDICAL WASTE INCINERATOR	198807
FLW-022	VET LAB INCINERATOR	198807
FLW-023	BOILER PLANT BUILDING 663	199206
FLW-024	SEWAGE TREATMENT PLANT	198807
FLW-025	WATER TREATMENT PLANT LAGOON	198807
FLW-026	SEWAGE TREATMENT PLANT LAGOON SITE	198807
FLW-027	TRAINING AREA 244 SEWAGE LAGOONS	198807
FTW-028	DPW OLD FIRE TRAINING AREA	
FLW-029	NEW FIRE TRAINING AREA	198807
FLW-030	OLD EOD OD/OB AREA RANGE 24	199509
FLW-031	CURRENT EOD OD/OB AREA RANGE 36	198807
FLW-032	CANNON ANG OB AND BURIAL SITE	199509
FLW-033A	UST BLDG 663,601,2502,2550 WASTE OIL	199310
FLW-033B	AST BLDG 777,170,1390 WASTE OIL	199203
FLW-033C	AST BLDG 875, WASTE OIL	199203
FLW-033D	AST BLDG 1383,2581,2250,2212 WASTE OIL	199304
FLW-033F	UST BLDG 2502,5069,5053,950 WASTE OIL	198812

FLW-033G	UST BUILD 2553 WASTE OIL TANK 500 GAL	198911
FLW-033H	UST BLDG 4050,4060 WASTE OIL	199309
FLW-033I	UST BUILD 5071 WASTE OIL TANK 1000 GAL	199208
FLW-033J	UST BUILD 5071 WASTE OIL TANK 500 GAL	199306
FLW-033K	UST BUILDING 5074 (4 TANKS)	199306
FLW-034	ASTS@ 600MP,900MP,1390	198807
FLW-035	DEH USED TRANSFORMER AREA 2222,2221	199305
FLW-036	DEH HAZARDOUS WASTE STGE AREA BLDG 2229	198807
FLW-037	DEH OLD PESTICIDE STORAGE AREA BLDG 2206	199912
FLW-038	DOL WASTE BATTERY ELECTROLYTE STGE AREA	199710
FLW-039	DRMO SCRAP YARD	198807
FLW-040	AMMUNITION CONTAINER STORAGE AREA	199509
FLW-042	60 ABANDONED UST'S	199310
FLW-043	WWII BUILDINGS (152)	199309
FLW-044	CONTAMINATED AREA FROM UST, BLDG 2563	199311
FLW-045	6 UST NEAR BUILDING 810	199211
FLW-046	BLDG 2291 - SOIL ASPHALT STORAGE AREA	199507
FLW-047	USTS 990	199404
FLW-048	BOILER UST @ 311, 745, 1021, 675	199501
FLW-049	DOL MAINTENANCE SHOP	199209
FLW-050	ROLL DENTAL CLINIC	199209
FLW-051	FLW COMMUNITY HOSPITAL	199209
FLW-052	WATER TREATMENT PLANT	199209
FLW-053	OLD FIRE TRAINING AREA AT LANDFILL 3	199304
FLW-054	OLD FIRE TRAINING AREA RUNWAY END	199304
FLW-055	OLD FIRE TRAINING AREA BALL FIELD	199304
FLW-057	ENTOMOLOGY LABORATORY	199209
FLW-058	FLW DEVICE SHOP BUILDING 1448	199209

FORT LEONARD WOOD IAP SCHEDULE

(Based on current constained funding)



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Phase Summary

This report identifies the number of approved sites in each remedial action phase, action and remedy status. Information is derived from data stored in the AEDB Restoration Module.

Phase/Status/Sites

PA

C	F	U	RC
68	0	0	0

SI

C	F	U	RC
62	0	2	40

RI/FS

C	F	U	RC
1	3	4	0

RD

C	F	U	RC
1	0	0	0

IRA

C	F	U	RC
2	0	1	0

RA(C)

C	F	U	RC
21	0	0	21

RA(O)

C	F	U	RC
0	0	0	0

LTM

C	F	U	RC
0	4	0	0

Remedy/Status/Actions(Sites)

FRA

C		F		U	
21	(21)	0	(0)	0	(0)

IRA

C		F		U	
2	(2)	0	(0)	1	(1)

RC Total: 61
RIP Total: 0

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Site Summary Chart

Fall 2003/ Working

This report provides summary information on Site(s) selected for each Installation(s). One use of this information is the Installation Action Plan (IAP). User can drill down to the Site Data Detail via the site name hyperlink. Information is derived from data stored in the AEDB Restoration Module. Runtime filters are listed in a separate section at the end of the report.

Oversight: NORTHWEST
MSC:
Installation: FORT LEONARD WOOD **State:** MO
FFID: MO213720979

Site	Alias	Status	Site Type	Description	RRSE	PA	SI	RI	RD	RA (C)	RA (O)	LTM	IRA (C)	IRA (U)	RIP	RC
FLW-001	FLW-001	A	Landfill	LANDFILL 1		C	C						0	0		198807
FLW-002	FLW-002	A	Landfill	LANDFILL 2	HIGH	C	C	U				F	0	0		200509
FLW-003	FLW-003	A	Landfill	LANDFILL 3	HIGH	C	C	U				F	0	0		200610
FLW-004	FLW-004	A	Landfill	LANDFILL 3B	HIGH	C	C						0	0		200010
FLW-005	FLW-005	A	Landfill	LANDFILL 3C	HIGH	C	C						0	0		200010
FLW-006	FLW-006	A	Landfill	LANDFILL 4	LOW	C	C	U					0	0		200910
FLW-007	FLW-007	A	Landfill	LANDFILL 5		C	C						0	0		198807
FLW-008	FLW-008	A	Landfill	LANDFILL 6		C	C						1	0		198807
FLW-009	FLW-009	A	Landfill	LANDFILL 7		C	C						0	0		198807
FLW-010	FLW-010	A	Landfill	LANDFILL 8		C	C						1	0		198807
FLW-011	FLW-011	A	Landfill	LANDFILL 9		C	C						0	0		198807
FLW-012	FLW-012	A	Landfill	LANDFILL 10A	LOW	C	C						0	0		199812
FLW-013	FLW-013	A	Landfill	LANDFILL 10B	LOW	C	C						0	0		199812
FLW-014	FLW-014	A	Landfill	LANDFILL 11A	LOW	C	C						0	0		199812
FLW-015	FLW-015	A	Landfill	LANDFILL 11B	LOW	C	C						0	0		199812
FLW-016	FLW-016	A	Landfill	LANDFILL 11C	LOW	C	C						0	0		199812
FLW-017	FLW-017	A	Landfill	LANDFILL 12		C	C						0	0		198807
FLW-018	FLW-018	A	Landfill	LANDFILL 13		C	C						0	0		198807
FLW-019	FLW-019	A	Landfill	LANDFILL 14		C	C						0	0		198807
FLW-020	FLW-020	A	Landfill	LANDFILL 15		C	C						0	0		198807

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Oversight: NORTHWEST
MSC:
Installation: FORT LEONARD WOOD **State:** MO
FFID: MO213720979

Site	Alias	Status	Site Type	Description	RRSE	PA	SI	RI	RD	RA (C)	RA (O)	LTM	IRA (C)	IRA (U)	RIP	RC
FLW-021	FLW-021	A	Incinerator	MEDICAL WASTE INCINERATOR		C	C						0	0		198807
FLW-022	FLW-022	A	Incinerator	VET LAB INCINERATOR		C	C						0	0		198807
FLW-023	FLW-023	A	Incinerator	BOILER PLANT BUILDING 663		C	C			C			0	0		199206
FLW-024	FLW-024	A	Waste Treatment Plant	SEWAGE TREATMENT PLANT		C	C						0	0		198807
FLW-025	FLW-025	A	Surface Impoundment/Lagoon	WATER TREATMENT PLANT LAGOON	NOT EVALUATED	C	C						0	0		198807
FLW-026	FLW-026	A	Surface Impoundment/Lagoon	SEWAGE TREATMENT PLANT LAGOON SITE		C	C						0	0		198807
FLW-027	FLW-027	A	Surface Impoundment/Lagoon	TRAINING AREA 244 SEWAGE LAGOONS		C	C			C			0	0		199412
FLW-028	FLW-028	A	Fire/Crash Training Area	DPW OLD FIRE TRAINING AREA	LOW	C	C	F					0	0		200910
FLW-029	FLW-029	A	Fire/Crash Training Area	NEW FIRE TRAINING AREA		C	C						0	0		198807
FLW-030	FLW-030	A	Explosive Ordnance Disposal Area	OLD EOD OD/OB AREA RANGE 24	LOW	C	C						0	0		199509
FLW-031	FLW-031	A	Explosive Ordnance Disposal Area	CURRENT EOD OD/OB AREA RANGE 36		C	C						0	0		198807

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Oversight: NORTHWEST
MSC:
Installation: FORT LEONARD WOOD **State:** MO
FFID: MO213720979

Site	Alias	Status	Site Type	Description	RRSE	PA	SI	RI	RD	RA (C)	RA (O)	LTM	IRA (C)	IRA (U)	RIP	RC
FLW-032	FLW-032	A	Burn Area	CANNON ANG OB AND BURIAL SITE	LOW	C	C						0	0		199509
FLW-033A	FLW-033A	A	Underground Storage Tank	UST BLDG 663,601,2502,2550 WASTE OIL		C	C			C			0	0		199310
FLW-033B	FLW-033B	A	Underground Storage Tank	AST BLDG 777,170,1390 WASTE OIL		C	C			C			0	0		199203
FLW-033C	FLW-033C	A	Underground Storage Tank	AST BLDG 875, WASTE OIL		C	C			C			0	0		199203
FLW-033D	FLW-033D	A	Underground Storage Tank	AST BLDG 1383,2581,2250,2212 WASTE OIL		C	C			C			0	0		199304
FLW-033F	FLW-033F	A	Underground Storage Tank	UST BLDG 2502,5069,5053,950 WASTE OIL		C	C			C			0	0		198812
FLW-033G	FLW-033G	A	Underground Storage Tank	UST BUILD 2553 WASTE OIL TANK 500 GAL		C	C			C			0	0		198911
FLW-033H	FLW-033H	A	Underground Storage Tank	UST BLDG 4050,4060 WASTE OIL		C	C			C			0	0		199309
FLW-033I	FLW-033I	A	Underground Storage Tank	UST BUILD 5071 WASTE OIL TANK 1000 GAL		C	C			C			0	0		199208

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Oversight: NORTHWEST
MSC:
Installation: FORT LEONARD WOOD **State:** MO
FFID: MO213720979

Site	Alias	Status	Site Type	Description	RRSE	PA	SI	RI	RD	RA (C)	RA (O)	LTM	IRA (C)	IRA (U)	RIP	RC
FLW-033J	FLW-033J	A	Underground Storage Tank	UST BUILD 5071 WASTE OIL TANK 500 GAL		C	C			C			0	0		199306
FLW-033K	FLW-033K	A	Underground Storage Tank	UST BUILDING 5074 (4 TANKS)		C	C			C			0	0		199306
FLW-034	FLW-034	A	Above Ground Storage Tank	ASTS@ 600MP,900MP,1390		C	C						0	0		198807
FLW-035	FLW-035	A	Storage Area	DEH USED TRANSFORMER AREA 2222,2221		C	C			C			0	0		199305
FLW-036	FLW-036	A	Storage Area	DEH HAZERDOUS WASTE STGE AREA BLDG 2229		C	C						0	0		198807
FLW-037	FLW-037	A	Pesticide Shop	DEH OLD PESTICIDE STORAGE AREA BLDG 2206	HIGH	C	C	C	C	C			0	0		199912
FLW-038	FLW-038	A	Storage Area	DOL WASTE BATTERY ELECTROLYTE STGE AREA		C	C						0	0		199710
FLW-039	FLW-039	A	Surface Disposal Area	DRMO SCRAP YARD	NOT EVALUATED	C	C						0	0		198807
FLW-040	FLW-040	A	Storage Area	AMMUNITION CONTAINER	LOW	C	C						0	0		199509

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Oversight: NORTHWEST
MSC:
Installation: FORT LEONARD WOOD **State:** MO
FFID: MO213720979

Site	Alias	Status	Site Type	Description	RRSE	PA	SI	RI	RD	RA (C)	RA (O)	LTM	IRA (C)	IRA (U)	RIP	RC
				STORAGE AREA												
FLW-042	FLW-042	A	Underground Storage Tank	60 ABANDONED UST'S			C			C			0	0		199310
FLW-043	FLW-043	A	Building Demolition/Debris Removal	WWII BUILDINGS (152)			C			C			0	0		199309
FLW-044	FLW-044	A	Underground Storage Tank	CONTAMINATED AREA FROM UST, BLDG 2563			C			C			0	0		199311
FLW-045	FLW-045	A	Underground Storage Tank	6 UST NEAR BUILDING 810			C			C			0	0		199211
FLW-046	FLW-046	A	Contaminated Fill	BLDG 2291 - SOIL ASPHALT STORAGE AREA			C	C		C			0	0		199507
FLW-047	FLW-047	A	Underground Storage Tank	USTS 990			C	C		C			0	0		199404
FLW-048	FLW-048	A	Underground Storage Tank	BOILER UST @ 311, 745, 1021, 675			C	C		C			0	0		199501
FLW-049	FLW-049	A	Storage Area	DOL MAINTENANCE SHOP			C	C					0	0		199209
FLW-050	FLW-050	A	Storage Area	ROLL DENTAL CLINIC			C	C					0	0		199209
FLW-051	FLW-051	A	Storage Area	FLW COMMUNITY HOSPITAL			C	C					0	0		199209

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Site Summary Chart

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Oversight: NORTHWEST
MSC:
Installation: FORT LEONARD WOOD **State:** MO
FFID: MO213720979

Site	Alias	Status	Site Type	Description	RRSE	PA	SI	RI	RD	RA (C)	RA (O)	LTM	IRA (C)	IRA (U)	RIP	RC
FLW-052	FLW-052	A	Sewage Treatment Plant	WATER TREATMENT PLANT		C	C						0	0		199209
FLW-053	FLW-053	A	Surface Disposal Area	OLD FIRE TRAINING AREA AT LANDFILL 3		C	C						0	0		199304
FLW-054	FLW-054	A	Fire/Crash Training Area	OLD FIRE TRAINING AREA RUNWAY END		C	C						0	0		199304
FLW-055	FLW-055	A	Fire/Crash Training Area	OLD FIRE TRAINING AREA BALL FIELD		C	C						0	0		199304
FLW-056	FLW-056	A	Spill Site Area	FLW DRY CLEANING SHOP	HIGH	C	C	U				F	0	1		200509
FLW-057	FLW-057	A	Storage Area	ENTOMOLOGY LABORITORY		C	C						0	0		199209
FLW-058	FLW-058	A	POL (Petroleum/Lubricants) Lines	FLW DEVICE SHOP BUILDING 1448		C	C						0	0		199209
FLW-059	FLW-059	A	Landfill	MUNICPLE LANDFILL ON SOUTH OF ROUBIDOUX	MEDIUM	C	U	F				F	0	0		200708
FLW-060	FLW-060	A	Landfill	LANDFILL ON A BRANCH TO BIG PINEY	MEDIUM	C	U	F					0	0		200910

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Remediation Activities

Past REM/ RA/ IRA

FLW-033A Waste oil tank removals (1993).

FLW-042 60 TANKS: Tanks and contaminated soil were removed after being abandoned during building demolition (1993).

FLW-044 Building 2563: Leaking UST was removed, site assessment completed and contamination removed (1993).

FLW-045 Building 810: Leaking UST was removed, site assessment completed and contamination removed (1992).

FLW-046 Building 2291: Leaking tanks removed, site assessment completed, and contamination removed (1995).

FLW-048 Boiler plant buildings: Abandoned UST's removed, site assessments completed, and contamination removed (1995).

FLW-058 Building. 990: Leaking UST's were removed, site assessment completed and contamination removed (1992).

Future REM/ RA/ IRA

None.

Cost Estimates

PRIOR YEAR FUNDS

FY85-94	$ 1,946,320
FY95	$ 0
FY96	$ 0
FY97	$ 458,000
FY98	$ 417,000
FY99	$ 301,000
FY00	$ 1,034,000
FY01	$ 656,000
FY02	$ 542,000
FY03 (expected)	$ 600,000
Prior Year Funding	$ 5,954,320

Fort Leonard Wood Unconstrained Cost to Complete

Site Name	Description	RRSE	Phase	FY04	FY05	FY06	FY07	FY08	FY09	FY10+	Phase Total	Site Total	DESCRIPTION
FLW-002	Landfill2	High	RI/FS	230							230		Finalize RI/FS (comments (USGS)
			LTM		100	100	180	100	150	588	1,218	1,448	LTM start with 14 wells, semi-annual (historic cost), 5 yr review in 09, well abandonment 10K in FY04, 18K in FY15+
FLW-003	Landfill 3A	High	RI/FS	542	150						692		Finalize RI/FS for 3 LF areas
			RI/FS	240	160						400		GWM at 27 wells & 4 springs
			LTM			160	260	160	160	1,254	1,994	3,086	GWM at 27 wells & 4 springs,2x 5 yr reviews, well abandonemnt 20K in FY06, 34K in 15+
FLW-006	Landfill 4	Low	RI/FS	465							465	465	complete SI report and RI/FS
FLW-028	DPW Old Fire Training Area	Low	RI/FS	60							60	60	complete SI report and RI/FS
FLW-056	FLW Dry Cleaning Shop	Med	RI/FS	705							705		complete RI/FS 455K, 4 additional wells 150K, monitoring 100K
			LTM		135	135	135	135	185	872	1,597	2,302	11 wells, semi-annual, 2* 5 yr reviews, well abandonemnt
FLW-059	Municiple Landfill on South of Roubidoux	Med	RI/FS	306							306		complete RI/FS, monitoring
			LTM		55	55	55	55	75	358	653	959	4 wells, semi-annual, 2*5 yr reviews, well abandonment
FLW-060	Landfill on a Branch to Big Piney	Med	RI/FS	136							136	136	complete SI report and RI/FS
FY TOTAL IN THOUSANDS OF $				2,684	600	450	630	450	570	3,072	8,456	8,456	
POM				560	1,590	489	800	915	1,133			8,456	
Difference				2,124	-990	-39	-170	-465	-563	3,072			

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Fort Leonard Wood Constrained Cost to Complete

Site Name	Description	RRSE	Phase	FY04	FY05	FY06	FY07	FY08	FY09	FY10+	Phase Total	Site Total	DESCRIPTION
FLW-002	Landfill2	High	RI/FS	180	50						230		Finalize RI/FS (comments (USGS), monitoring
			LTM		100	100	180	100	150	558	1,188	1,418	LTM start with 14 wells, semi-annual (historic cost), 5 yr review in 09, well abandonment 10K in FY04, 18K in FY15+
FLW-003	Landfill 3A	High	RI/FS	255	407	30					692		Finalize RI/FS for 3 LF areas
			RI/FS		240	160					400		GWM at 27 wells & 4 springs
			LTM				280	160	160	1,394	1,994	3,086	GWM at 27 wells & 4 springs,2x 5 yr reviews, well abandonemnt 20K in FY06, 34K in 15+
FLW-006	Landfill 4	Low	RI/FS					329	136		465	465	complete SI report and RI/FS
FLW-028	DPW Old Fire Training Area	Low	RI/FS						60		60	60	complete SI report and RI/FS
FLW-056	FLW Dry Cleaning Shop	High	RI/FS	125	580						705		complete RI/FS 455K, 4 additional wells 150K, monitoring 100K
			LTM		135	135	135	135	185	872	1,597	2,302	11 wells, semi-annual, 2* 5 yr reviews, well abandonemnt
FLW-059	Municiple Landfill on South of Roubidoux	Med	RI/FS		78	78	150				306		complete RI/FS, monitoring
			LTM				55	55	55	488	653	959	4 wells, semi-annual, 2*5 yr reviews, well abandonment
FLW-060	Landfill on a Branch to Big Piney	Med	RI/FS					136			136	136	complete SI report and RI/FS
FY TOTAL IN THOUSANDS OF $				560	1,590	503	800	915	746	3,312	8,426	8,426	
POM				560	1,590	489	800	915	1,133			8,426	
Difference				0	0	14	0	0	-387	3,312			

RESTORATION ADVISORY BOARD (RAB) STATUS

A. Efforts taken to determine interest.

A contract has been awarded to determine public interest specifically for the IRP.

B. Results.

Results will be available no later then December 2003, if warranted FLW will form a RAB.

C. Conclusions.

Because Fort Leonard Wood is a gaining installation for BRAC, there has been a great deal of information presented to the public concerning all aspects of the environmental program. Although the focus of the information has been on the Environmental Impact Statement (EIS) and permits, much information about the IRP, including the Installation Action Plan has been provided to the public in the form of supporting information to the EIS.

D. Follow-up procedures.

FLW is conducting a survey to determine public interest in partnering with DoD through the RAB process. The survey results will be presented to the public via an availability session, at which time FLW will determine RAB formation feasibility.